3M Science. Applied to Life.™

Instructions and Parts List

3M-Matic™

7000r-7000r3 HS Pro

Type 22100

Random High Speed Case Sealer with AccuGlide™ V HSP Taping Heads and Optional Tape Application Monitor (TAM)

Serial #: _____

For reference, record machine serial number here.

Important Safety Information

BEFORE INSTALLING OR OPERATING THIS EQUIPMENT
Read, understand and follow all safety and operating instructions.

Spare Parts

It is recommended you immediately order the spare parts listed in the “Spare Parts/Service Information” section. These parts are expected to wear through normal use, and should be kept on hand to minimize production delays.

Replacement Parts and Service Information

To Our Customers:

This is the 3M-Matic™/AccuGlide™/Scotch® equipment you ordered. It has been set up and tested in the factory with Scotch® Tapes.

Included with each machine is an Instructions and Parts List Manual.

Technical Assistance / Replacement Parts and Additional Manuals:

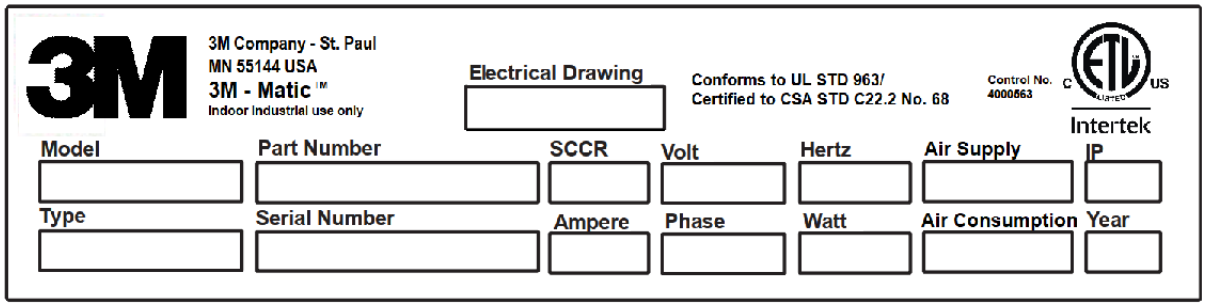
For technical assistance, contact our help line at 1-800-328-1390. Provide the customer support coordinator with the model/machine name, machine type, and serial number that are located on the identification plate (For example: Model 7000r HS - Type 22100 - Serial Number 13282).

To order replacement parts, contact:

CSPD division of Combi Packaging Systems LLC.
6299 Dressler Road NW
North Canton, OH 44720
store.combi.com/CSPD/PublicStore/

Phone: 1-800-344-9883
Fax: 1-877-847-5883
e-mail: CSPD-CSR@combi.com
www.combi.com

Identification Plate



Minimum billing on replacement part orders will be $50.00
Replacement part informationa and pricing availabel on request
There is a 15% restocking fee (per order) on returned parts
Note: Outside of the United States, for replacement parts and ordering information please contact your local /regional 3M or 3M representitive.

Replacement Parts and Service Information

To Our Customers:

This is the 3M-Matic™/AccuGlide™/Scotch® equipment you ordered. It has been set up and tested in the factory with Scotch® tapes. If any problems occur when operating this equipment and you desire a service call or phone consultation, call, write, or fax the appropriate number listed below.

Included with each machine is an Instructions and Parts List Manual.

Service, replacement parts, and additional manuals available direct from:

Order parts by part number, part description, and quantity required.
Also, when ordering parts or additional manuals, include model/machine name, machine type, and serial number that are located on the identification plate.

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(For Taping Head information, see Manual 2: AccuGlide™ 4 Taping Heads, 2 Inch or 3 Inch)

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Taping Head Information

Manual 2: AccuGlide™ 4 Taping Heads — 2 Inch or 3 Inch
(See Manual 2 for Table of Contents)

Abbreviations and Acronyms

List of Abbreviations/Acronyms

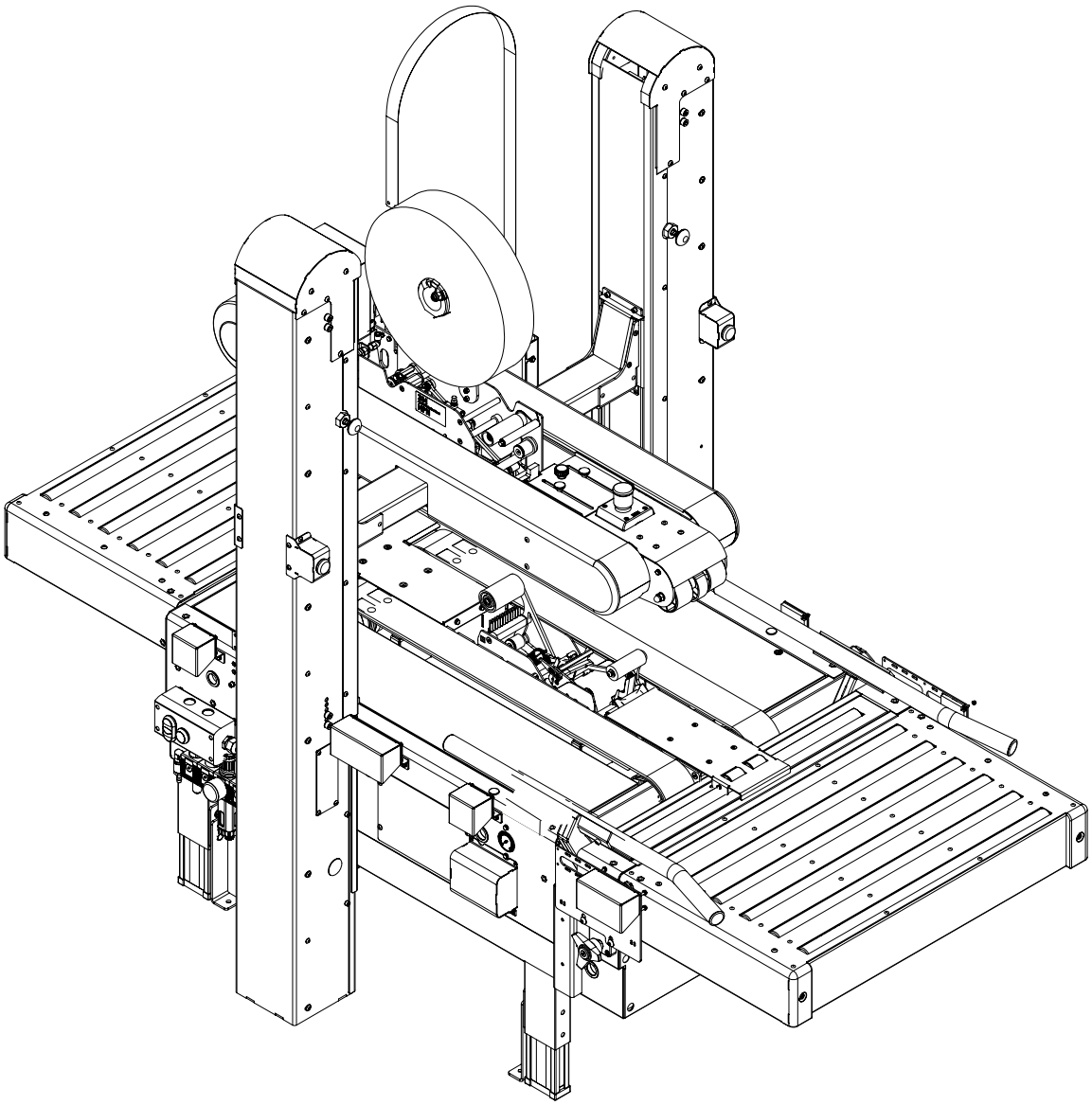
3M-Matic ..... Trademark of 3M St. Paul, MN 55144-1000
AccuGlide ..... Trademark of 3M St. Paul, MN 55144-1000
Scotch ..... Trademark of 3M St. Paul, MN 55144-1000
Drw. ..... Drawing
Ex. ..... For Example
Fig. ..... Exploded View Figure no. (spare parts)
Figure ..... Illustration
Max. ..... Maximum
Min. ..... Minimum
Nr. ..... Number
N/A ..... Not Applicable
OFF ..... Machine Not Operating
ON ..... Machine Operating
PLC ..... Programmable Logic Control
PP ..... Polypropylene
PU/PU Foam .... Polyurethane Foam
PTFE ..... Polytetraflourethelene
PVC ..... Poly-vinyl chloride
W ..... Width
H ..... Height
L ..... Length
TAM ..... Tape Application Monitor
PLC ..... Programmable Logic Control
LD ..... Little David

1. Introduction

1.1 Manufacturing Specifications / Description / Intended Use

The **3M-Matic™ 7000r-7000r3 HS Pro Random High Speed Case Sealer with AccuGlide™ V Taping Heads** is designed to apply a "C" clip of **Scotch®** pressure-sensitive film box sealing tape to the top and bottom center seam of regular slotted containers. The **7000r-7000r3 HS** Pro automatically adjusts to a wide range of box sizes (see "Specifications Section – Box Weight and Size Capacities").

The **3M-Matic™** case sealing machines have been designed and manufactured in compliance with the legal requirements at the date of inception.



3M-Matic™ 7000r-7000r3 HS Pro Random High Speed Case Sealer, Type 22100

1.2 How to Read and Use the Instruction Manual

This instruction manual covers safety aspects, handling and transport, storage, unpacking, preparation, installation, operation, set-up and adjustments, technical and manufacturing specifications, maintenance, troubleshooting, repair work and servicing, electric diagrams, warranty information, disposal (ELV), a definition of symbols, plus a parts list of the 3M-Matic™ **7000r-7000r3 HS Pro** Random High Speed Case Sealer.

3M Industrial Specialties Division
3M Center, 223-4NE-13
St. Paul, MN 55144-1000 (USA)

1.2.1 Importance of the Manual

The manual is an important part of the machine; all information contained herein is intended to enable the equipment to be maintained in perfect condition and operated safely. Ensure that the manual is available to all operators of this equipment and is kept up to date with all subsequent amendments. Should the equipment be sold or disposed of, please ensure that the manual is passed on. Electrical and pneumatic diagrams are included in the manual. Equipment using PLC controls and/or electronic components will include relevant schematics or programs in the enclosure and in addition, the relevant documentation will be delivered separately.

1.2.2 Manual Maintenance

Keep the manual in a clean and dry place near the machine. Do not remove, tear, or rewrite parts of the manual for any reason. Use the manual without damaging it. In case the manual has been lost or damaged, ask your after sale service for a new copy.

1.2.3 Consulting the Manual

The manual is composed of:

- Pages which identify the document and the machine
- Index of the subjects
- Instructions and notes on the machine
- Enclosures, drawings and diagrams
- Spare parts (last section)

All pages and diagrams are numbered. The spare parts lists are identified by the figure identification number. All the notes on safety measures or possible dangers are identified by the symbol:

1.2.4 How to Update the Manual in Case of Modifications to the Machine

Modifications to the machine are subject to manufacturer's internal procedures. The user receives a complete and up-to-date copy of the manual together with the machine. Afterwards the user may receive pages or parts of the manual which contain amendments or improvements made after its first publication. The user must use them to update this manual.

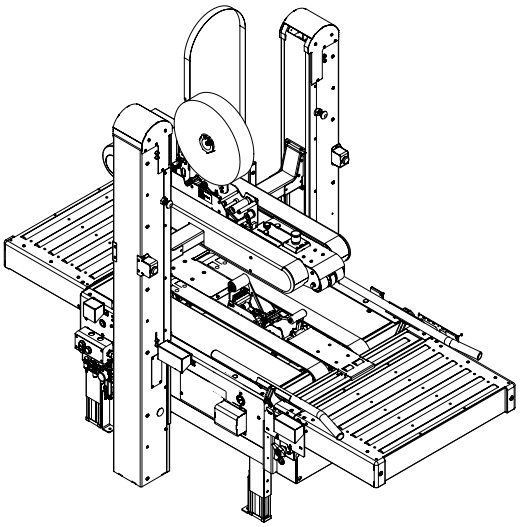
2. General Information

2.1 Data Identifying Manufacturer and Machine

3M

3M Industrial Specialties Division

3M Center
St. Paul, MN 55144-1000 (USA)



3M

3M Company - St. Paul
MN 55144 USA
3M - Matic ™
Indoor Industrial use only

Electrical Drawing

Conforms to UL STD 963/
Certified to CSA STD C22.2 No. 68

Control No. 4000663

Intertek

Model	Part Number	SCCR	Volt	Hertz	Air Supply	IP

Type	Serial Number	Ampere	Phase	Watt	Air Consumption	Year

2.2 Data for Technical Assistance and Service

Agent/Distributor or
Local After Sale Service:

2.3 Warranty

Equipment Warranty and Limited Remedy: THE FOLLOWING WARRANTY IS MADE IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTY OF MERCHANTABILITY, THE IMPLIED WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE AND ANY IMPLIED WARRANTY ARISING OUT OF A COURSE OF DEALING, A CUSTOM OR USAGE OF TRADE:

3M sells its **3M-Matic™ 7000r-7000r3 HS Pro Random High Speed Case Sealer, Type 22100** with the following warranties:

1. The drive belts and the taping head knives, springs and rollers will be free from all defects for ninety (90) days after delivery.
2. All other taping head parts will be free from all defects for three (3) years after delivery.
3. All other parts will be free from all defects for two (2) years after delivery.

If any part is proved to be defective within its warranty period, then the exclusive remedy and 3M's and seller's sole obligation shall be, at 3M's option, to repair or replace the part, provided the defective part is returned immediately to 3M's factory or an authorized service station designated by 3M. A part will be presumed to have become defective after its warranty period unless the part is received or 3M is notified of the problem no later than five (5) calendar days after the warranty period. If 3M is unable to repair or replace the part within a reasonable time, then 3M at its option, will replace the equipment or refund the purchase price. 3M shall have no obligation to provide or pay for the labor required to install the repaired or replacement part. 3M shall have no obligation to repair or replace (1) those parts failing due to operator misuse, carelessness, or due to any accidental cause other than equipment failure, or (2) parts failing due to non-lubrication, inadequate cleaning, improper operating environment, improper utilities or operator error.

Limitation of Liability: 3M and seller shall not be liable for direct, indirect, special, incidental or consequential damages based upon breach of warranty, breach of contract, negligence, strict liability or any other legal theory.

The foregoing Equipment Warranty and Limited Remedy and Limitation of Liability may be changed only by a written agreement signed by authorized officers of 3M and seller.

Contents: 7000r-7000r3 HS Pro Random High Speed Case Sealer

(1) 7000r-7000r3 HS Pro Random High Speed Case Sealer, Type 22100

(1) Tool Kit

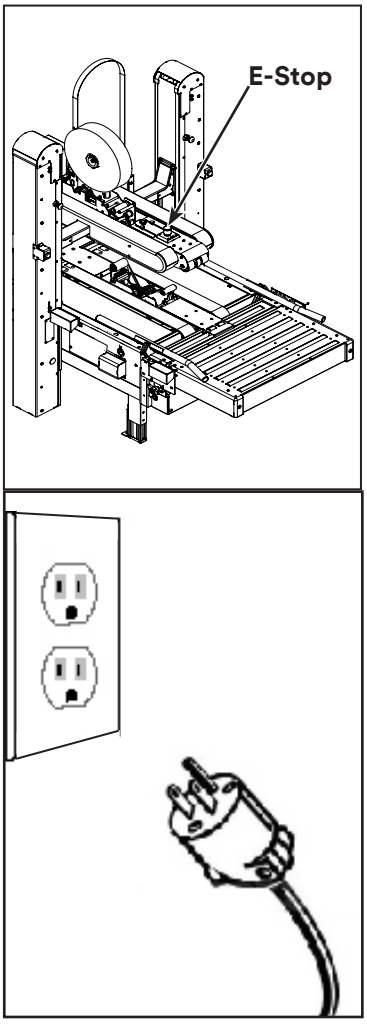
(1) Instruction and Parts Manual

3. Safety

3.1 General Safety Information

Read all the instructions carefully before starting work with the machine; please pay particular attention to sections marked by the symbol:

Figure 3-1



The machine is provided with a LATCHING EMERGENCY STOP BUTTON **(Figure 3-1)**; when this button is pressed, it stops the machine at any point in the working cycle.

Maintain clear access to power cord while machine is operating.

Disconnect plug from power source before machine maintenance **(Figure 3-1)**.

Also disconnect air if the machine has a pneumatic system.

Keep this manual in a handy place near the machine. This manual contains information that will help you to maintain the machine in a good and safe working condition.

3.2 Explanation of Signal Word and Possible Consequences

This safety alert symbol identifies important messages in this manual. READ AND UNDERSTAND THEM BEFORE INSTALLING OR OPERATING THIS EQUIPMENT.

Caution — Indicates a potentially hazardous situation, which, if not avoided, may result in minor or moderate injury and/or property damage.

Warning — Indicates a potentially hazardous situation, which, if not avoided, could result in serious injury or death and/or property damage.

3.3 Table of Warnings

Warning

- To reduce the risk associated with mechanical and electrical hazards:
- Read, understand, and follow all safety and operating instructions before operating or servicing the case sealer.
- Allow only properly trained and qualified personnel to operate and service this equipment.

Warning

- **To reduce the risk associated with hazardous voltage:**
- Position electrical cord away from foot and vehicle traffic.

Warning

- **To reduce the risk associated with pinches, entanglement and hazardous voltage:**
- Turn pneumatic and electrical supplies off and disconnect before performing any adjustments, maintenance or servicing the machine or taping heads.

Warning

- **To reduce the risk associated with pinches and entanglement hazards:**
- Do not leave the machine running while unattended.
- Turn the machine off when not in use.
- Never attempt to work on any part of the machine, load tape, or remove jammed boxes from the machine while the machine is running.

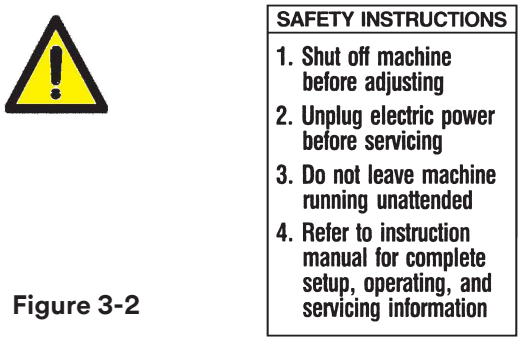


Figure 3-2

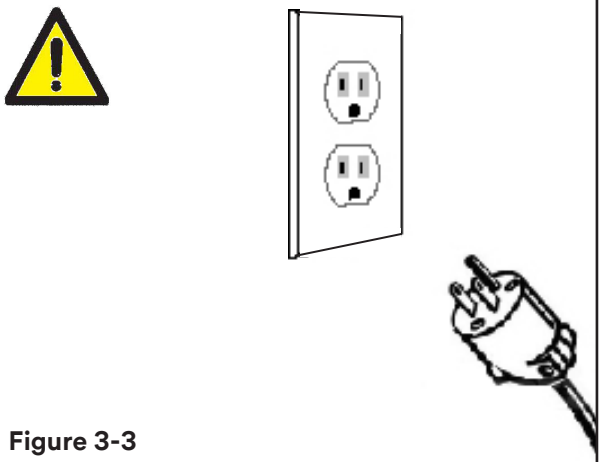


Figure 3-3

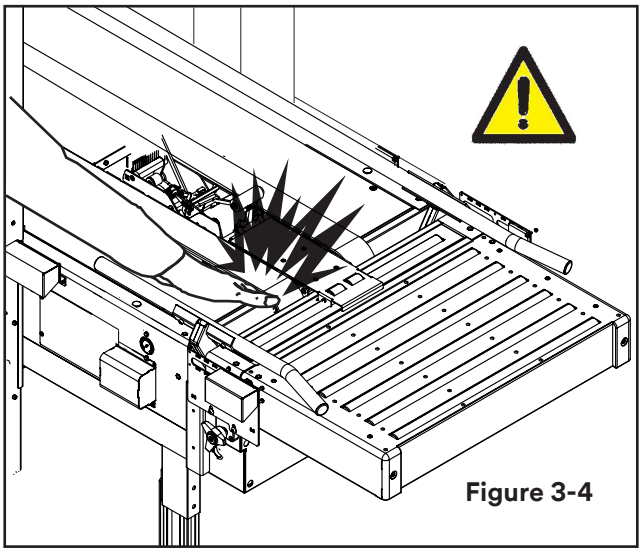


Figure 3-4

Important! Cavity in the conveyor bed. Never put your hands inside any part of the machine while it is working. Serious injury may occur (**Figure 3-4**).

Warning

- To reduce the risk associated with sharp blade hazards:
- Keep hands and fingers away from tape cutoff blades under orange blade guards. The blades are extremely sharp.

Important! Tape cutting blade. Never remove safety device which covers blade on top and bottom taping units. Blades are extremely sharp. Any error may cause serious injuries **(Figure 3-5).**

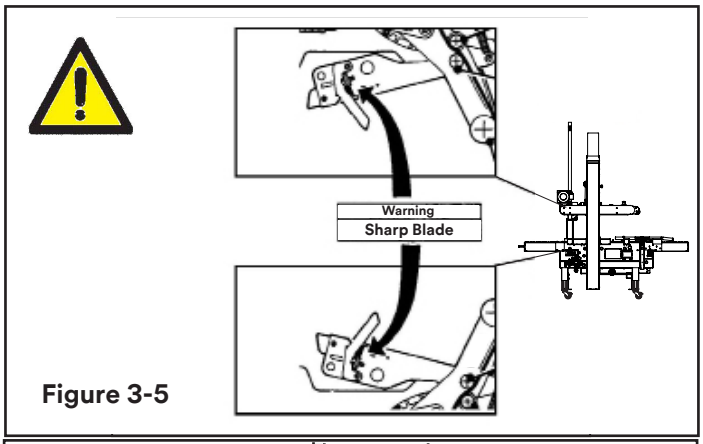


Figure 3-5

Warning

- To reduce the risk associated with fire and explosion hazards:
- Do not operate this equipment in potentially flammable / explosive environments.

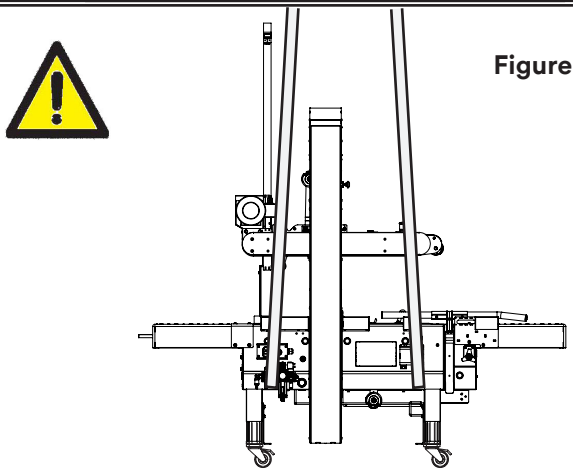


Figure 3-6

Warning

- To reduce the risk associated with muscle strain:
- Use appropriate rigging and material handling equipment when lifting or repositioning this equipment.
- Use proper body mechanics when removing or installing taping heads that are moderately heavy or may be considered awkward to lift.

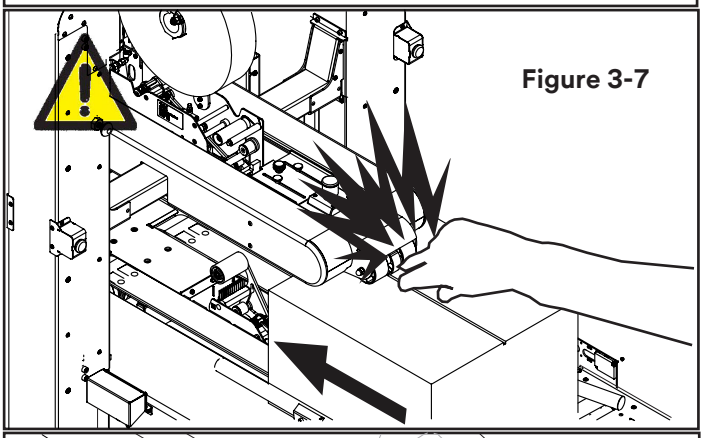


Figure 3-7

Caution

- To reduce the risk associated with pinch and entanglement hazards:
- Keep hands clear of the upper head support assembly as boxes are transported through the machine.
- Keep hands, hair, loose clothing, and jewelry away from box compression rollers and all moving parts.
- Always feed boxes into the machine by pushing only from the end of box.

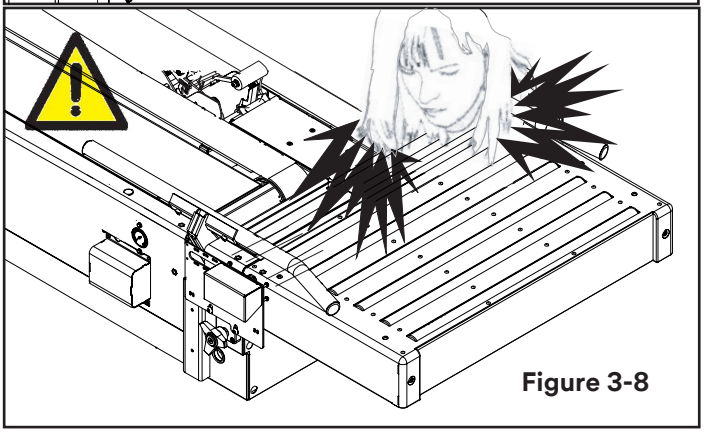


Figure 3-8

3.4 Operator's Qualifications

- Machine Operator
- Mechanical Maintenance Technician
- Electrical Maintenance Technician
- Manufacturer's Technician/Specialist **(See Section 3)**

3.5 Number of Operators

The operations described below have been analyzed by the manufacturer. The recommended number of operators for each operation provides the best and safest work performance.

Note: A smaller or greater number of operators could be unsafe.

3.6 Instructions for a Safe Use of the Machine / Definition of Operator's Qualifications

Only persons who have the skills described in the skill levels section should be allowed to work on the machine. It is the responsibility of the user to appoint the operators having the appropriate skill level and the appropriate training for each category of job.

3.7 Residual Hazards

The case sealer **7000r-7000r3 HS Pro** incorporates various safety protections which should never be removed or disabled. It is essential that the operator and service personnel be warned that hazards exist which cannot be eliminated:

3.8 Recommendations and Measures to Prevent Other Hazards which Cannot be Eliminated

- The operator must stay on the working position shown in the Operation Section. He must never touch the running driving belts or put his hands inside any cavity.
- The operator must pay attention to the blades during the tape replacement.

3.9 Personal Safety Measures

Safety glasses, safety gloves, safety helmet, safety shoes, air filters, ear muffs -

None are required except when recommended by the user.

3.10 Predictable Actions which are Incorrect and Not Allowed

- Never try to stop/hold the box while being driven by the belts.
- Never remove or disable the safety devices.
- Only authorized personnel should be allowed to carry out the adjustments, repairs or maintenance which require operation with reduced safety protections.
- During such operations, access to the machine must be restricted. When the work is finished, the safety protections must immediately be reactivated.
- The cleaning and maintenance operations must be performed after disconnecting the pneumatic system and electric power.
- Do not modify the machine or any part of it.
- Clean the machine using only dry cloths or light detergents. Do not use solvents, petrols, etc.
- Install the machine following the suggested layouts and drawings.

Warning

- **To reduce the risk associated with mechanical and electrical hazards:**
- Read, understand, and follow all safety and operating instructions before operating or servicing the case sealer.
- Allow only properly trained and qualified personnel to operate and service this equipment.

3.11 Operator's Skill Levels Required to Perform the Main Operations on the Machine

The Table shows the minimum operator's skill for each machine operation.

Important! The factory manager must ensure that the operator has been properly trained on all the machine functions before starting work.

Skill 1: Machine Operator

This operator is trained to use the machine with the machine controls, to feed cases into the machine, make adjustments for different case sizes, to change the tape and to start, stop and restart production.

Skill 2: Mechanical Maintenance Technician

This operator is trained to use the machine as the MACHINE OPERATOR and in addition is able to:

- Work with the safety protection disconnected
- Check and adjust mechanical parts
- Carry out machine maintenance operations/repairs

He is not allowed to work on live electrical components

Skill 2a: Electrical Maintenance Technician

This operator is trained to use the machine as the MACHINE OPERATOR and in addition is able to:

- Work with the safety protection disconnected
- Check and adjust mechanical parts
- Carry out machine maintenance operations / repairs / adjustments / repair electrical components

He is allowed to work on live electrical panels, connector blocks, control equipment, etc.

Skill 3: Specialist from the Manufacturer

Skilled operator sent by the manufacturer or its agent to perform complex repairs or modifications (on agreement with the customer).

Operator's Skill Levels Required to Perform the Main Operations on Machine

Operation	Machine Status	Required Operator Skill	Number of Operators
Machine installation and setup	Running with safety protections disabled	2 and 2a	2
Extraordinary mechanical maintenance		3	1
Extraordinary electrical maintenance		2a	1
Adjusting box size	Stopped by pressing the EMERGENCY STOP button	1	1
Tape replacement		1	1
Blade replacement	Electric power disconnected	2	1
Drive belt replacement		2	1
Ordinary maintenance		2	1

3.12 Component Locations

Refer to **Figure 3-9** below to acquaint yourself with the various components and controls of the case sealer. Also refer to Manual 2 for taping head components.

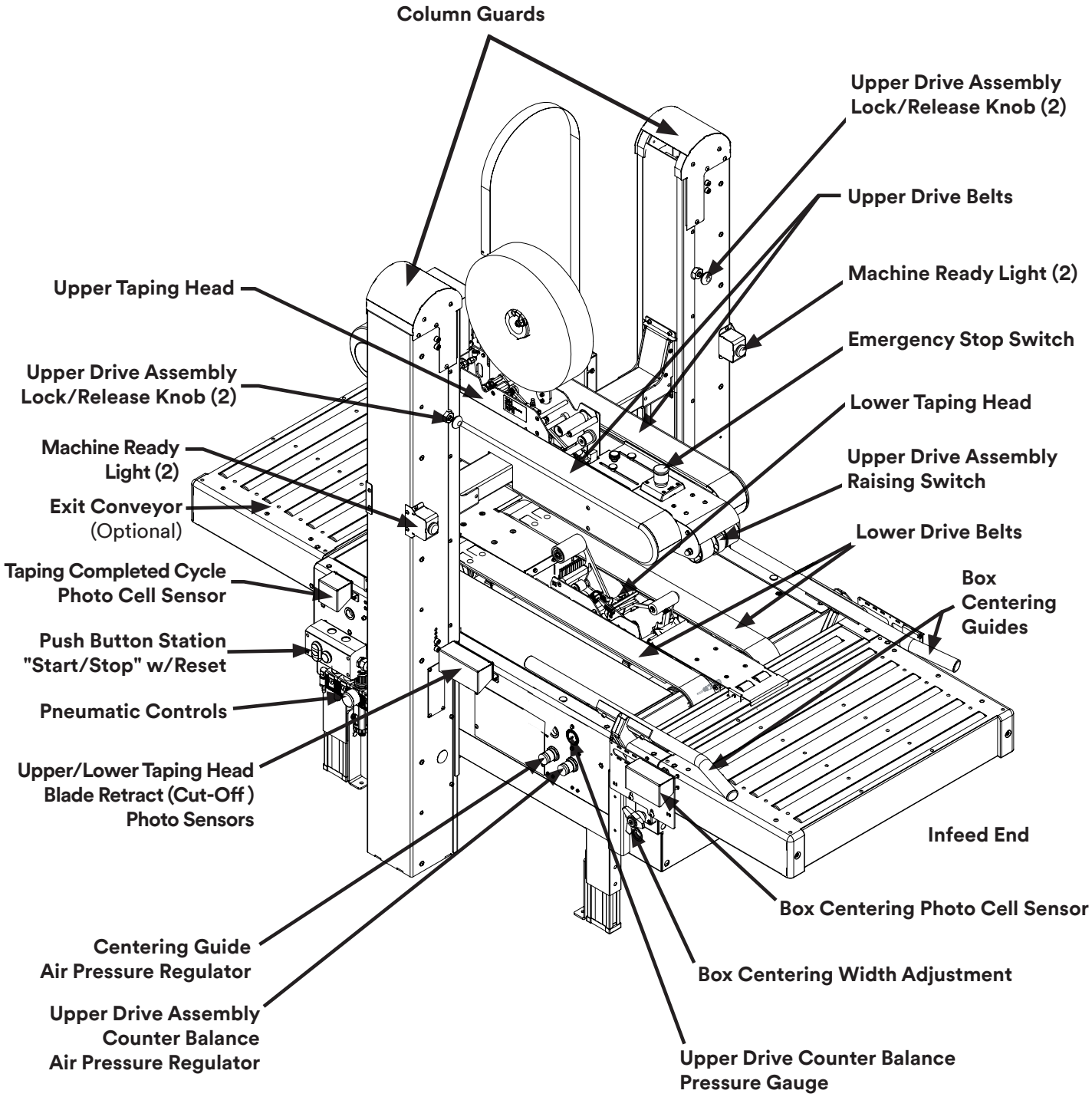


Figure 3-9 7000r-7000r3 HS Pro Case Sealer Components (Left Front View)

3.13 Table of Warnings and Replacements Labels

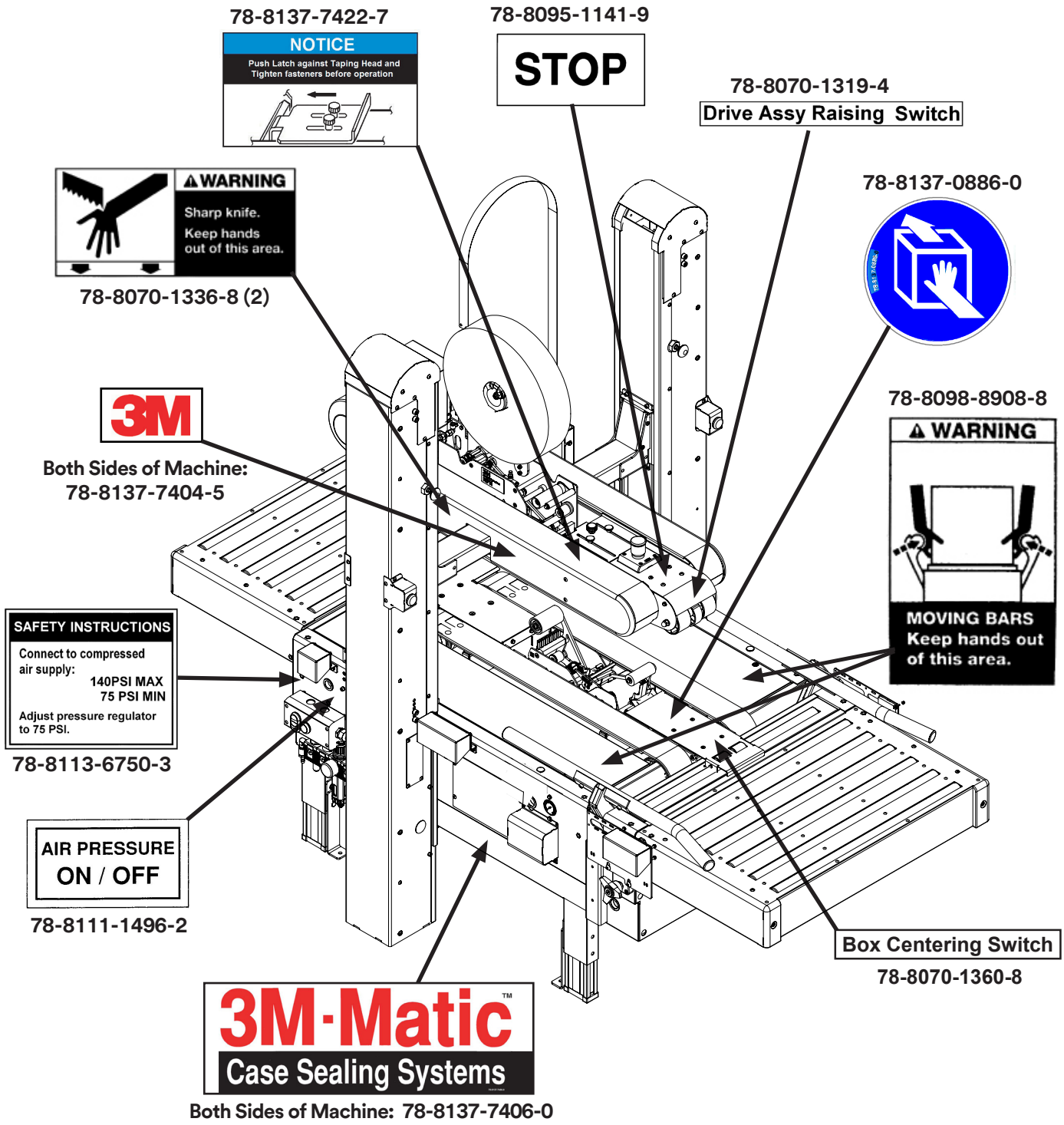


Figure 3-10 Replacement Labels / 3M Part Numbers

3.13 Table of Warnings and Replacements Labels

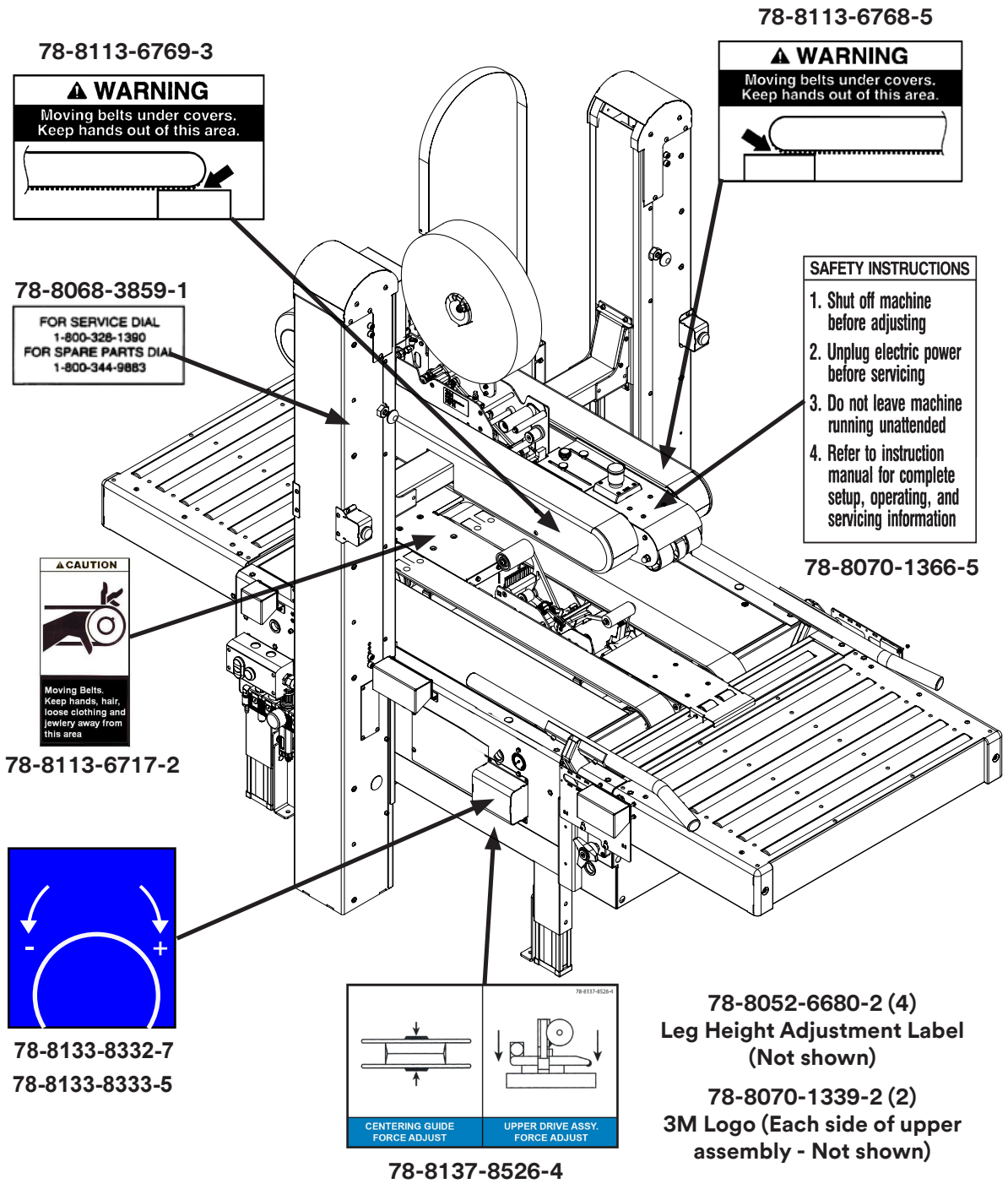


Figure 3-11 Replacement Labels / 3M Part Numbers

3.13 Table of Warnings and Replacements Labels *(continued)*

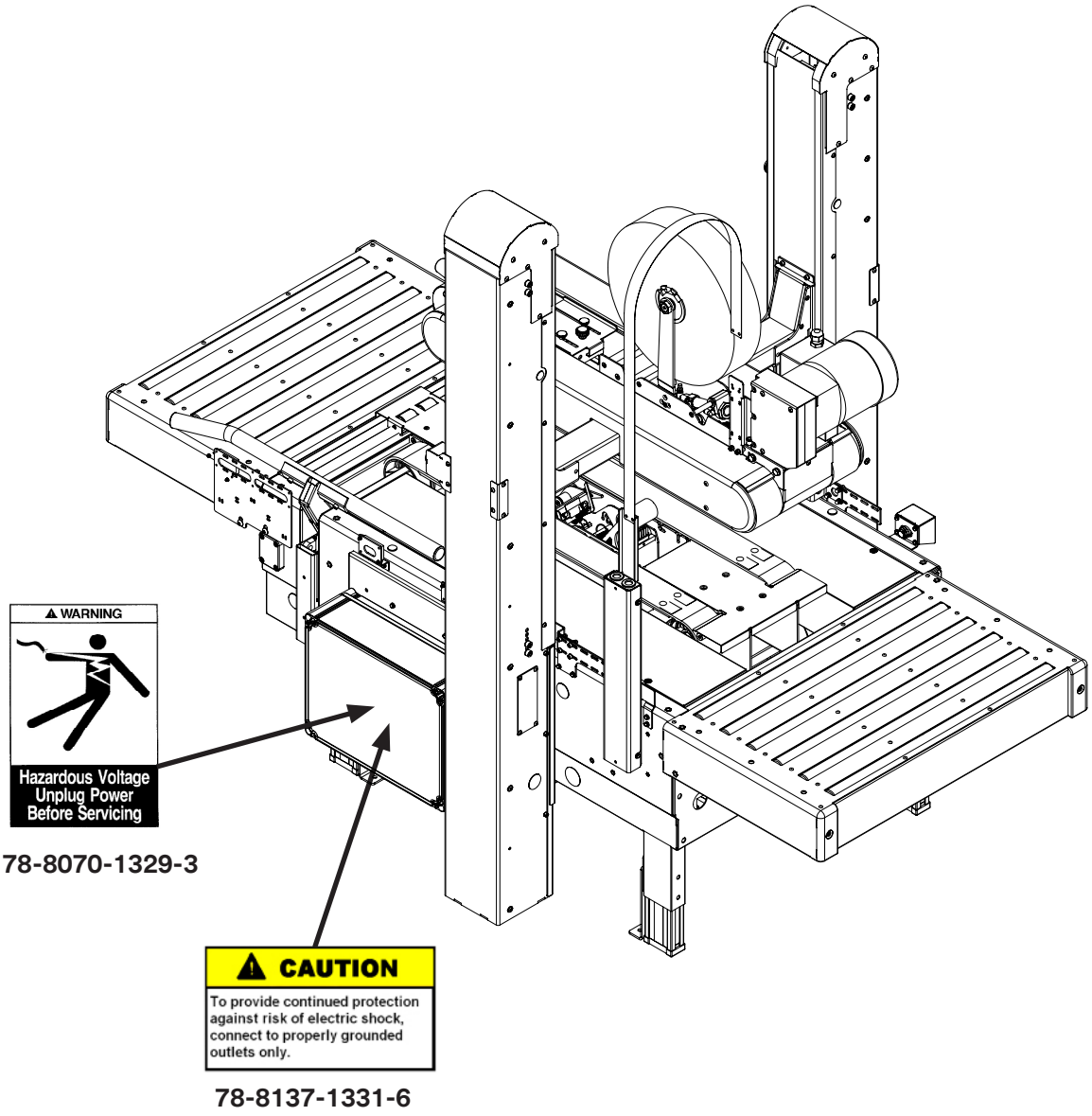


Figure 3-12 Replacement Labels / 3M Part Numbers (Reverse View)

4. Specifications

4.1 Power Requirements:

Electrical: 115 VAC, 60 Hz, 9.5 A , 1/2 hp (1140 watts)

Pneumatic: 90 PSIG [6.2 bar], 15 SCFM [425 L/Min @ 21°C/70° F] Peak Usage.

The machine is equipped with a 2.4m [8 foot] standard neoprene covered power cord and a grounded plug. Contact your 3M Representative for power requirements not listed above.

4.2 Operating Rate:

Belt speed is 0.76 m/s [150 F.P.M.]
Actual production rate is dependent on operator's dexterity.
Boxes must be 18 inches (457mm) apart (minimum).

4.3 Operating Conditions

Use in dry, relatively clean environments at 5° C to 50° C [40° F to 120° F] with clean, dry boxes.

Note: Machine should not be washed or subjected to conditions causing moisture condensation on components.

Warning

- To reduce the risk associated with fire and explosion hazards:
- Do not operate this equipment in potentially flammable or explosive environments.

4.4 Tape

Scotch® pressure-sensitive film box sealing tapes.

4. Specifications *(continued)*

4.5 Tape Width

50.8mm [2 inches] minimum to 76.2mm [3 inches] maximum

4.6 Tape Roll Diameter

Up to 405mm [16 inch] maximum on a 76.2mm [3 inch] diameter core.
(Accommodates all system roll lengths of **Scotch®** film tapes.)

4.7 Tape Width - Standard

48 or 72mm ±0.08mm [1.89 or 2.83 inch ±0.03 inch]

Tape Application Leg Length – Optional

50.8mm ± 6mm [2 inch ± 0.25 inch]

4.8 Box Board

Style – regular slotted containers – RSC
125 to 275 P.S.I. bursting test, single wall or double wall B or C flute.
23-44 lbs. per inch of width Edge Crush Test (ECT)

4.9 Box Weight and Size Capacities

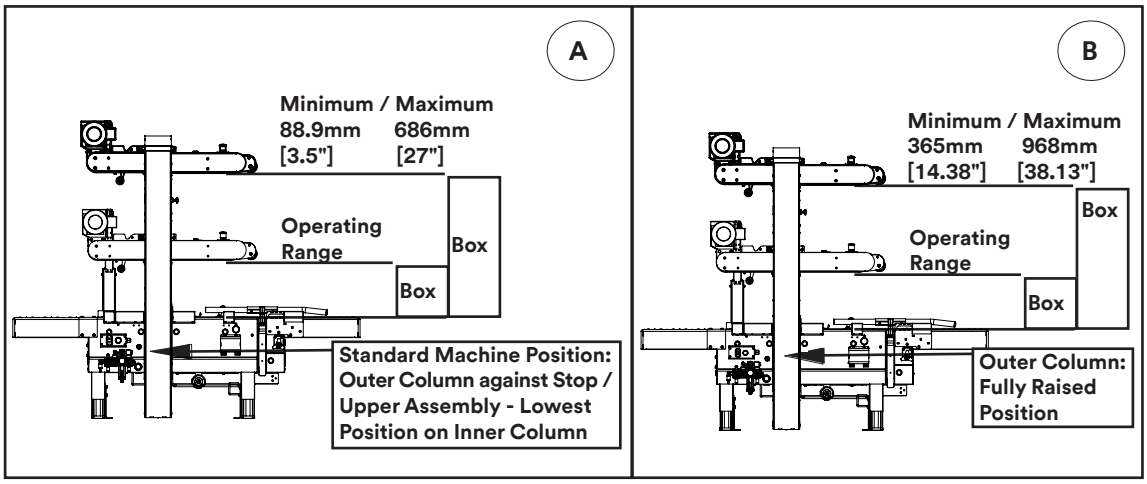
A. Box Weight, filled: 5 lbs.– 85 lbs. [2.3 kg–38.6 kg]. Contents must support flaps.
B. Box Dimensions for **7000r HS Pro** (Inches [mm])

* Boxes narrower than 8 inches [200mm] may require more frequent belt replacement because of limited contact area.

	Length	Width*	(A) Standard Pos. AG 4 Tape Leg (i.e. 2" [50.8])	(B) Fully Raised Pos.
Minimum	7" [178]	7" [178]	3.5" [88.9]	14.38" [365]
Maximum	N/A	26" [660]	27" [686]	38.13" [968]

4. Specifications *(continued)*

Minimum/Maximum Box Height Combinations
(To relocate upper frame or outer columns, see "Special Set-Up Procedure")



Note: Length of boxes in illustrations are not to scale.

Case Height Range Illustration:

A. Standard Machine Position: Outer Columns positioned against Stop with Upper Drive Assembly set to Lowest Position on Inner Columns. Tape Leg Length - 2" [50.8mm].

B. Raised Machine Position: Maximum Box Height (i.e. Outer Columns and Upper Drive Assembly in Highest Position - See Special Set-Up Procedure). Tape Leg Length - 2" [50.8mm].

Boxes narrower than 8" [200mm] may require more frequent belt replacement because of limited contact area.

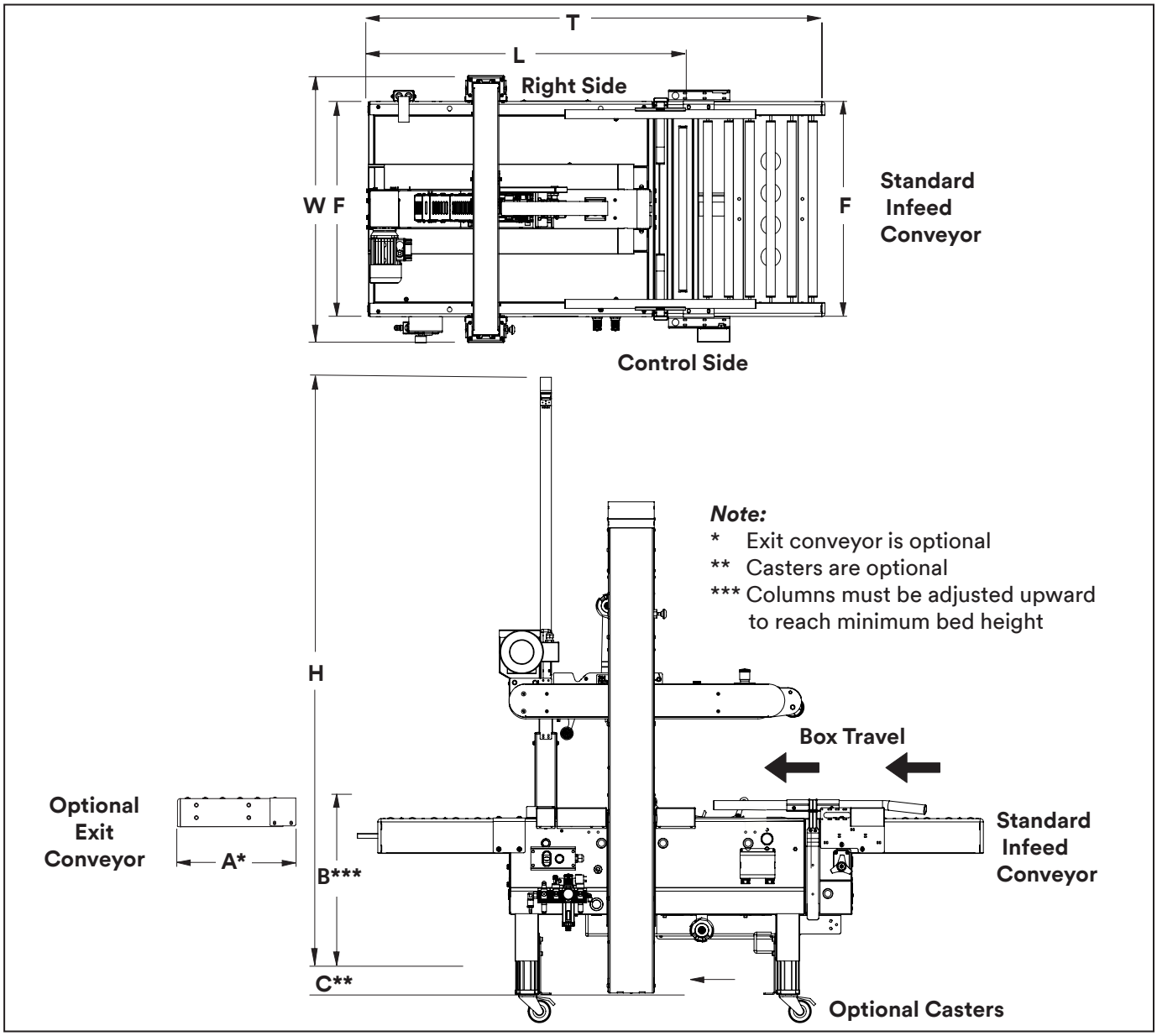
Special modifications may be available for carton sizes not listed on previous page. Contact your 3M Representative for information.

Note: The case sealer can accommodate most boxes within the size range listed above. However, if the box length (in direction of seal) to box height ratio is .6 or less, then several boxes should be test run to assure proper machine performance. Any box ratio approaching this limitation should be test run to assure performance.

DETERMINE THE BOX LIMITATIONS BY COMPLETING THIS FORMULA:

$$\frac{\text{BOX LENGTH IN DIRECTION OF SEAL}}{\text{BOX HEIGHT}} = \text{SHOULD BE GREATER THAN .6}$$

4. Specifications *(continued)*



4.10 Machine Dimensions:

	W	L	H	A	B	C	F	T
Minimum								
mm	1143	1180	1988	457*	597***	111**	768	1637
[Inches]	[45]	[46.5]	[78.25]	[18]	[23.5]	[4.38]	[30.25]	[64.5]
Maximum								
mm			2270		890			
[Inches]	- -	- -	[89.38]	- -	[35]	- -	- -	-

Packaged:
65.5" [1664] (H) x 51" [1295] (L) x 49" [1245] (W)

Weight: 245 kg [540 pounds] crated (approximate)
213 kg [470 pounds] uncrated (approximate)

4.11 Machine Noise Level:

78dB with tape roll inserted.

4.12 Set-Up Recommendations:

- Machine must be level.
- Supplied infeed and optional exit conveyors (if used) should provide straight and level box entry /exit.
- Optional exit conveyor (powered or gravity) can help move sealed boxes away from machine.

5. Shipment-Handling-Storage-Transport

5.1 Shipment and Handling of Packed Machine

- The machine is fixed on the pallet with four (4) bolts and can be lifted by using a fork truck.
- The package is suitable to travel by land and by air.
- Optional sea freight package is available.

Packaging Overall Dimensions (Figure 5-1)

See Specifications.

During the shipment it is possible to stack a maximum of 2 machines **(Figure 5-2).**

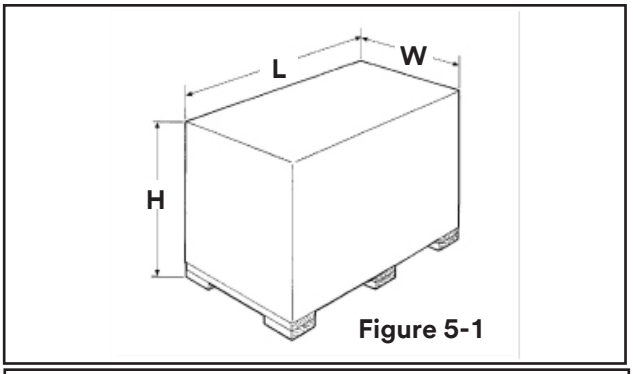


Figure 5-1

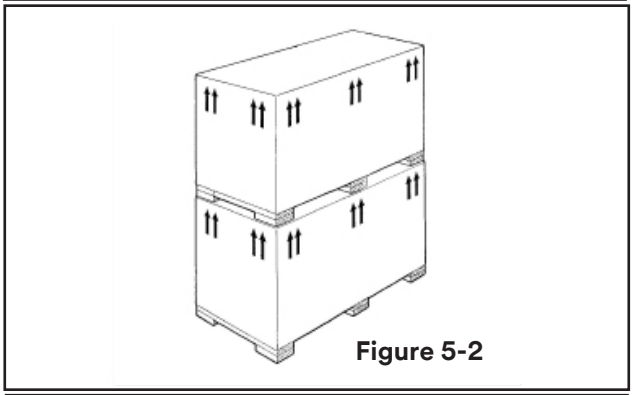


Figure 5-2

5.2 Packaging for Overseas Shipment (Optional - Figure 5-3)

The machines shipped by sea freight are covered by an aluminum/ polyester/polythene bag which contains dehydrating salts.

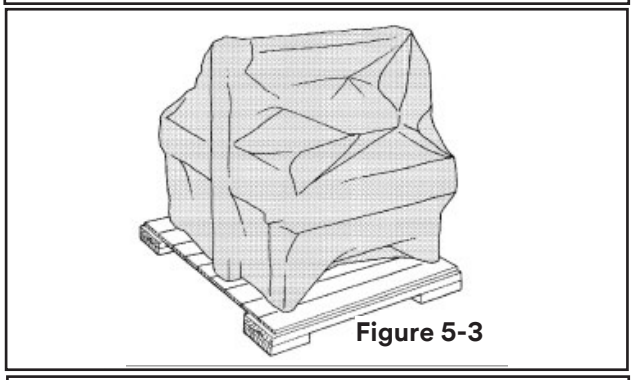


Figure 5-3

5.3 Handling and Transportation of Uncrated Machine

The uncrated machine should not be moved except for short distances and indoors ONLY. Without the supporting pallet, the machine is exposed to damage and may cause injuries.
To move the machine use belts or ropes, paying attention to place them in open areas using care that the straps do not interfere with controls or lower taping head **(Figure 5-4).**

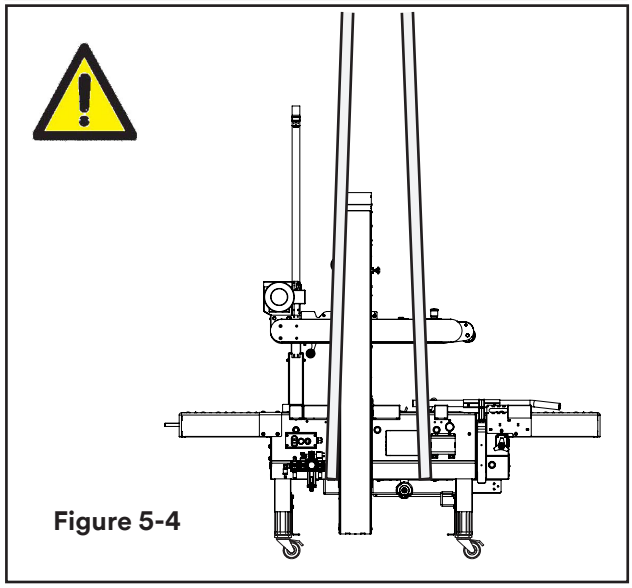


Figure 5-4

5.4 Storage of the Packed or Unpacked Machine

If the machine is not used for a long period, please take the following precautions:

- Store the machine in a dry and clean place.
- If the machine is unpacked it is necessary to protect it from dust.
- Do not stack anything over the machine.
- It is possible to stack a maximum of 2 machines (if they are in their original packing).

6. Unpacking

6.1 Uncrating

The envelope attached to shipping box contains the uncrating instructions of the machine **(Figure 6-1).**

Cut straps. Cut out staple positions along the bottom of the shipping box (or remove staples with an appropriate tool **- Figure 6-2).** After cutting out or removing the staples, lift the shipping box in order to clear the machine (two persons required).

Transport the machine with a forklift truck to the operating position. Lift the pallet at the point indicated in **Figure 6-3** (weight of machine + pallet = See Specifications).

Removal of Pallet

Loosen and remove nuts and brackets using the open end spanner supplied in the tool box **(Figure 6-4).**

A cardboard box is located under the machine body. Retrieve instruction manual for additional set-up procedures. The box also contains parts removed for shipping, spare parts and tools **(Figure 6-5)**

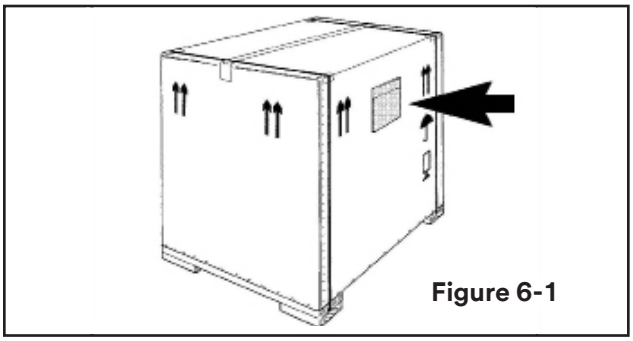


Figure 6-1

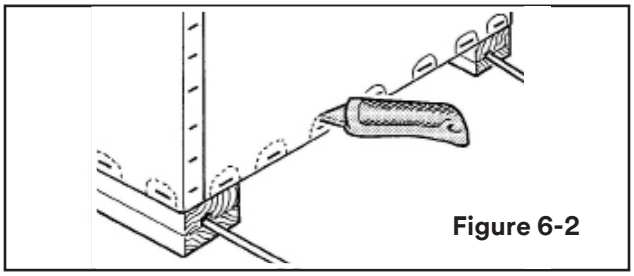


Figure 6-2

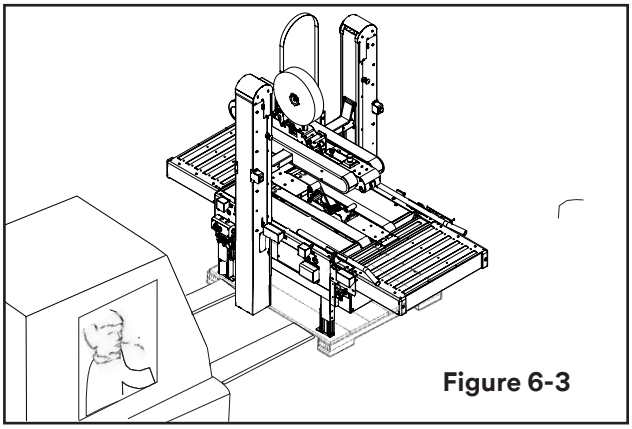


Figure 6-3

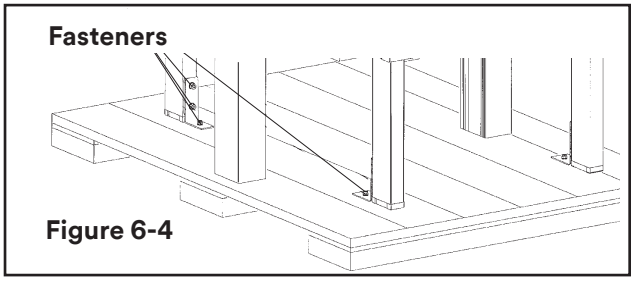


Figure 6-4

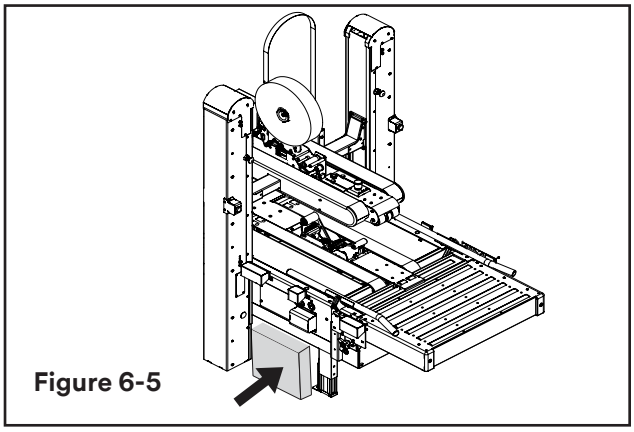


Figure 6-5

6.2 Disposal of Packaging Materials

The **7000r-7000r3 HS Pro** package is composed of:

- Wooden pallet
- Cardboard shipping box
- Wooden supports
- Metal fixing brackets
- PU foam protection
- PP plastic straps
- Dehydrating salts in bag
- Special bag of laminated polyester/ aluminium/Polyethylene (sea freight package only)
- Polyethylene protective material

For the disposal of the above materials, please follow the environmental directives or the law in your country.•

7. Installation

7.1 Operating Conditions

The machine should operate in a dry and relatively clean environment (See Specifications).

7.2 Space Requirements for Machine Operation and Maintenance Work

Minimum distance from wall **(Figure 7-1)**:

A = 1000mm.
B = 700mm.

Minimum height = 2700mm.

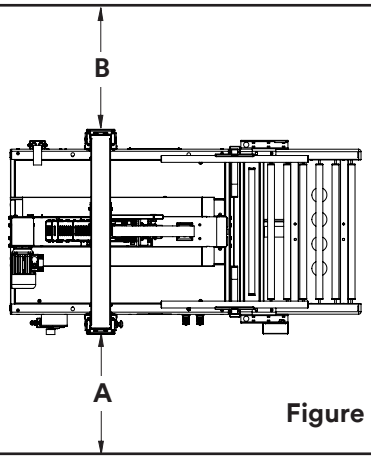


Figure 7-1

7.3 Tool Kit Supplied with Machine

A tool kit containing some tools are supplied with the machine. These tools should be adequate to set-up the machine, however, other tools supplied by the customer will be required for machine maintenance.

7.4 Machine Set-Up / Bed Height

1 - Lift the machine with belts or ropes paying attention to place the belts at points on frame to avoid any possible damage **(Figure 7-2).**

To set the machine bed height, do the following:

2 - Adjust machine bed height. The case sealer is equipped with four (4) adjustable legs that are located at the corners of the machine frame.

The legs can be adjusted to set different machine bed heights **(Figure 7-3)**.

Also refer to “Specifications”

3 - Lock the screws.

4 - Repeat the operation for all legs. (It is not necessary to fix or anchor the machine to the floor).

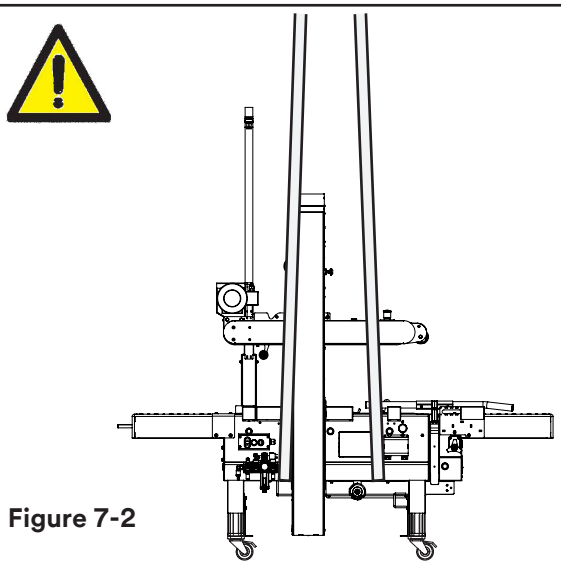


Figure 7-2

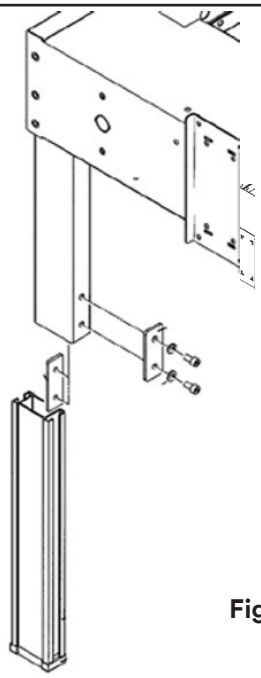


Figure 7-3

7.5 Removal of Plastic Ties

Cut the plastic which attaches the top head to the frame and remove the polystyrene blocks **(Figure 7-4).**

Cut the plastic strap which attaches the strip and the EMERGENCY STOP cable to the frame **(Figure 7-5).**

Cut the plastic ties holding the lower taping head in position **(Figure 7-6).**

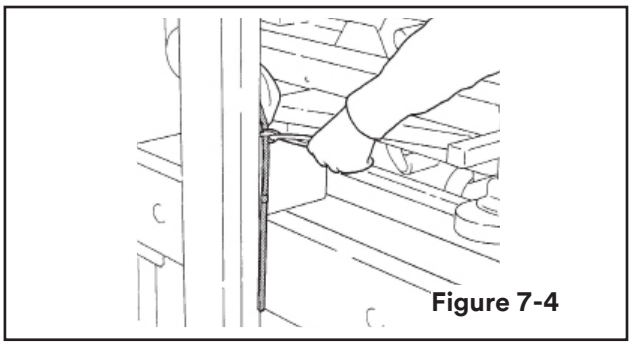


Figure 7-4

7.6 Assembly Completion / Machine Set-up

Note – A tool kit consisting of metric open end and hex socket wrenches is provided with the machine. These tools should be adequate to set-up the machine, however, other tools supplied by customer will be required for machine maintenance.

(see the Technical Documentation / Spare Parts-Order Section)

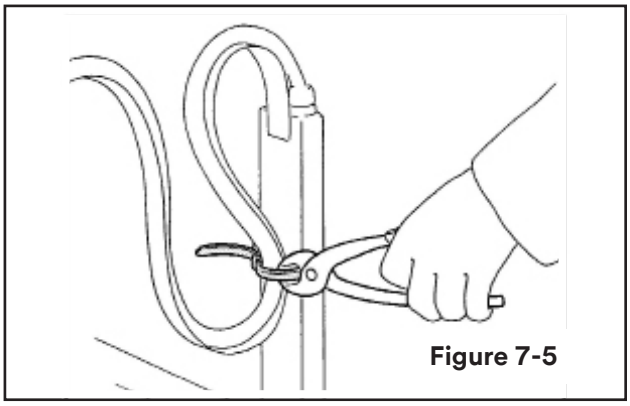


Figure 7-5

(continued on next page)

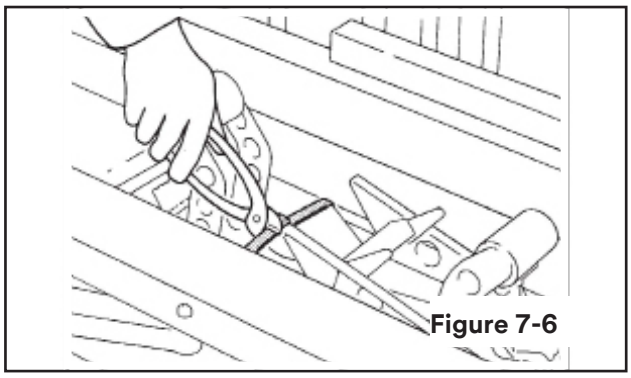


Figure 7-6

Machine Set-Up *(continued)*

The following instructions are presented in the order recommended for setting up and installing the case sealer, as well as for learning the operating functions and adjustments. Following them step by step will result in a thorough understanding of the machine and an installation in your production line that best utilizes the many features built into the case sealer.

Refer to **Figure 7-13** to identify the various components of the case sealer.

1. **Machine Cable Ties:**
   Cut cable ties securing upper assembly to machine bed on each side.
2. **Pneumatic connection:**
   a. Read and remove safety tag from pneumatic "On/Off" valve.
   b. Connect the main air supply line to the inlet side of the on/off valve using the barbed fitting and hose clamp provided **(See Figure 7-14)**.

   The customer supplied air hose (8mm [5/16 inch] must be clamped tightly to the barbed fitting.

   If another type of connector is desired, the barbed fitting can be removed and replaced with the desired 1/4-18 NPT threaded connector. Always turn the air valve **"Off"** when the air supply line is being connected or disconnected.
3. **Air Supply:**
   Turn the air supply on by turning the air on/off valve to SUP (On).
4. **Latches:**
   Raise and latch (2 latches) upper drive assembly in full "Up" position.

Note – Read "Operation – Mechanical Latch" before raising and latching upper drive assembly.

Important – Use care when working with compressed air.

⚠ Warning

- Allow only properly trained and qualified personnel to operate and service this equipment.

See Specifications for compressed air supply needs. As shown in **Figure 7-14**, an on/off valve, pressure switch, pressure regulators, and filter are provided to service the air supply.

Note – Precision regulators are used to balance the upper drive assembly and box centering guides.

Due to the self relieving feature of these regulators, a small amount of air will continually vent to the atmosphere. This is normal and amounts to approximately 3 litre/min. [0.1 SCFM].

The case sealer requires [90 PSIG], 6.2 bar [15 SCFM] 425 L/Min @ 21°C/70° F.

⚠ Warning

- To reduce the risk associated with impact hazards:
- Always use appropriate supporting means when working under the upper drive assembly

5. **Taping Head Cable Ties:**
   Hold taping head Buffing Roller and cut and remove cable tie that holds Upper and Lower Taping applying/ buffing arms retracted (Applying/ buffing rollers are held retracted for shipment - **Figure 7-6).** Allow buffing/ applying arms to extend slowly.
6. **Taping Heads:**
   Check for free action of both upper and lower taping heads. Push buffing roller into head to check for free, smooth action of taping heads.

⚠ Warning

- To reduce the risk associated with sharp blade hazards:
- Keep hands and fingers away from tape cutoff blades under orange blade guards. The blades are extremely sharp.

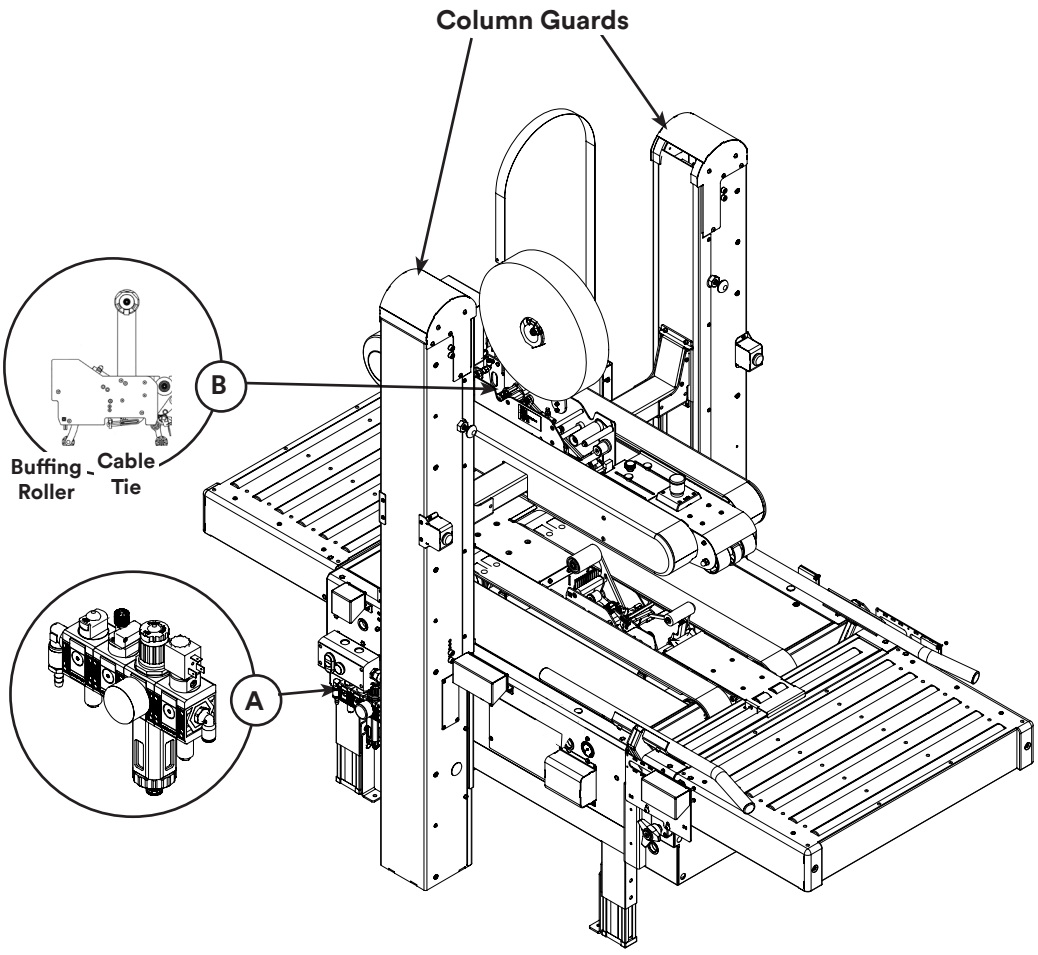


Figure 7-7 7000r-7000r3 HS Pro Frame Set-Up

7.7 Infeed Conveyor Assembly

1. Remove the conveyor and the package of parts from the carton.
2. Verify that package contains two (2) right angled cover plates, twelve (12) M8 × 15 hex head screws, and eight (8) M8 flat washers.
3. To assemble the infeed conveyor, refer to **Figure 7-8** and locate four (4) bolt holes on the infeed end of the case sealer frame.
4. Insert a M8 × 15 screw in each hole so that only a few threads take hold. **Do not use washers with these screws.**
5. Attach the infeed conveyor over the screws using the inverted keyholes in the end of the conveyor.

   Tighten all four (4) screws with a 13mm wrench.
6. Refer to **Figure 7-9.** Set the cover plates over the joint between the conveyor and the frame on each side and secure them with four (4) M8 × 15 screws and M8 washers.

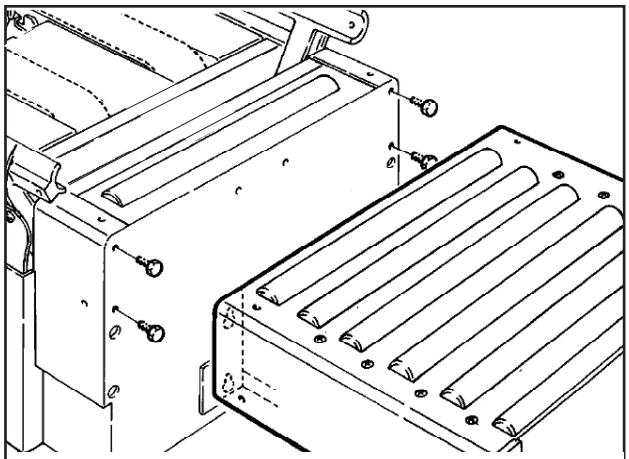


Figure 7-8 Infeed Conveyor

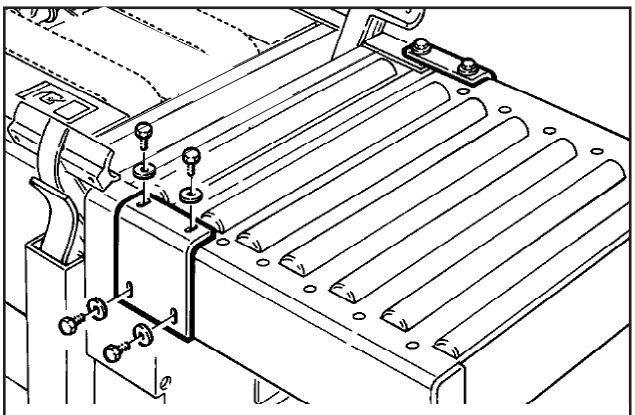


Figure 7-9 Cover Plates

7.8 Centering Guides

1. Remove the two centering guides and four (4) M6 × 20 socket head screws from the package.
2. Using a 5mm hex key wrench, attach the centering guides to the rails with four (4) M6 × 20 screws (two [2] in each guide) as shown in **Figure 7-10.**

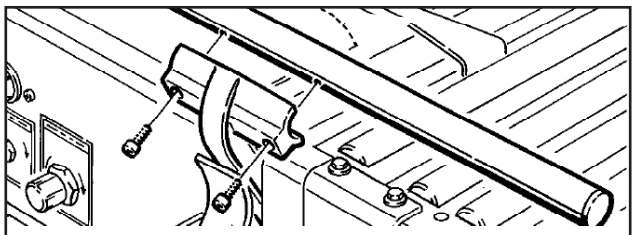


Figure 7-10 Centering Guides

7.9 Tape Leg Length

Taping heads are pre-set to apply 50.8mm [2 inch] long tape legs.

7.10 Electrical Connections and Controls

The electrical Push Button Station "Start/Stop" with reset are located on the left side of the machine frame (**Figure 7-11**). If desired, for operator convenience, this "Start/Stop" with reset station can be relocated to the right side of the machine frame. A standard three conductor power cord with plug is provided at the back of the electrical control box for electrical service **(See Specifications).** The receptacle providing this service shall be properly grounded. Before the power cord is plugged into outlet make sure that all packaging materials and tools are removed from the machine.

Do not plug electrical cord into outlet until ready to run machine.

Use of an extension cord is not recommended. However, if one is needed for temporary use, it must have a wire size of 1.6mm diameter [AWG14], have a maximum length of 7.5m [25 ft] and must be properly grounded.

7.11 Initial Start-Up of Case Sealer

After completing the "Installation and Set-Up" procedure, continue through "Operation" for tape loading and start-up to be sure case sealer is properly adjusted to run boxes.

Warning

- To reduce the risk associated with mechanical and electrical hazards:
- Read, understand, and follow all safety and operating instructions before operating or servicing the case sealer.
- Allow only properly trained and qualified personnel to operate and service this equipment.

Warning

- **To reduce the risk associated with hazardous voltage:**
- Position electrical cord away from foot and vehicle traffic.

Warning

- **To reduce the risk associated with pinches, entanglement and hazardous voltage:**
- Turn pneumatic and electrical supplies off and disconnect before performing any adjustments, maintenance or servicing the machine or taping heads.

7.12 Controls, Valves, Switch Locations

1. Push Button Station "Start/Stop" w/Reset Button
Controls Box taping Cycle / Resets Controls / Starts and Stops Drive Belts.

The Circuit Breaker is preset and requires no further maintenance. If circuit is overloaded and trips, unplug machine from power source:

a) Determine and correct cause of overload.
b) Reconnect machine to power source.
c) The Push Button Station is used to turn machine On and Off. The Reset Button is used before initial startup or for clearing a fault condition (**Figure 7-11**).

Push Button Station w/Reset Button

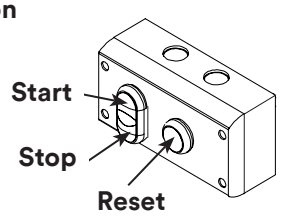


Figure 7-11

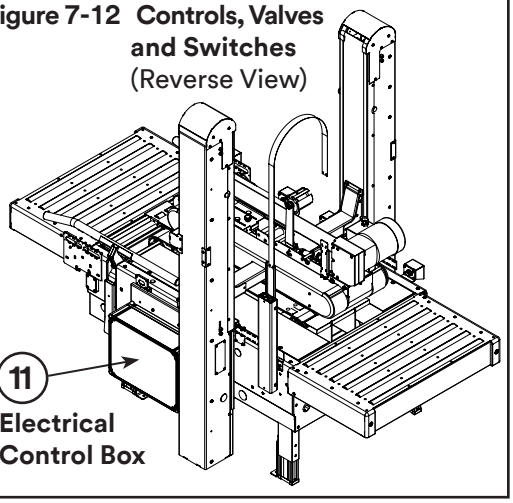
2. Main Air "On/Off" Valve/Pressure Regulator/ Filter/Exhaust Valve – Figure 7-14
This set of pneumatic components controls, regulates and filters plant air supply to two separate control circuits of the case sealer.
"On/Off" Valve – "On" turn to "SUP"– "Off" turn to "EXH".

Note – Turning air supply "Off" automatically bleeds air pressure from the case sealer air circuit.

Refer to **Figure 7-12 and 7-13** below to acquaint yourself with the various components and controls of the case sealer. Also see component locations in **Section 3** and **Manual 2** for taping head components.

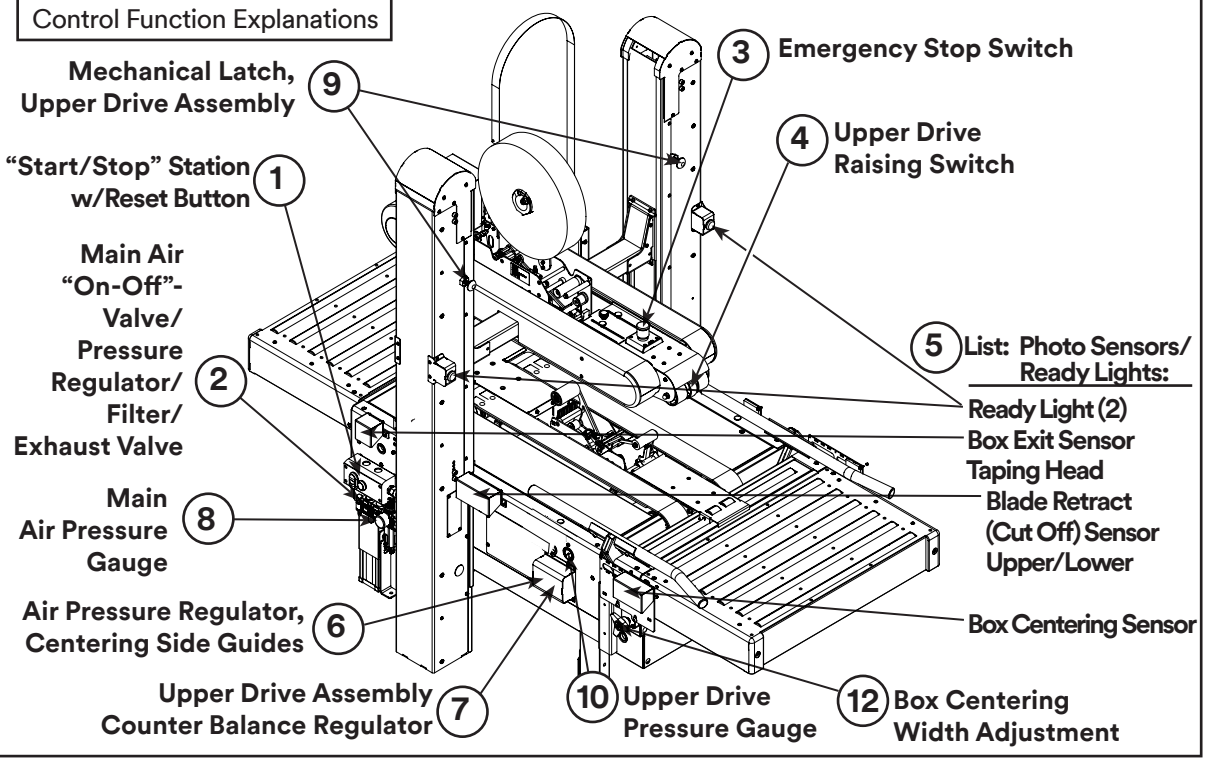
Important: Always turn the air "Off" when machine is not in use, when servicing the machine, or when connecting or disconnecting air supply lines.

Figure 7-12 Controls, Valves and Switches
(Reverse View)



Note: See 7.12 Control Function Explanations

Figure 7-13 Controls, Valves and Switches



(continued)

3. **Emergency Stop Switch**
   The machine electrical supply can be turned off by pressing the latching emergency stop switch (releases switch latch). To restart machine, turn/release emergency stop, press reset button and then press "Start/Stop" Station Start Button.

4. **Raising Switch - Upper Drive Assembly**
   This switch, when touched by leading edge of a box, activates a switch that pneumatically raises the upper frame to allow insertion of the box under drive belts. As the box moves under the switch, the upper drive assembly descends on the box and drive belts convey the box through the machine.

   When switch is activated by hand, the upper drive assembly rises to its maximum height. Released, the upper drive assembly descends to its rest position.

5. **Photo Sensors/Ready Lights:**

   Ready Light (2) - indicates machine is clear/ready.

   Box Centering Sensor - This sensor controls the box centering guides. Sensor is activated when the box enters the case sealer and centering guides close (centering the box). Then, after box passes this sensor, Centering Guides are released (Guides return to original position ready for next box).
   Box Present/Lower Blade Retract Sensor - Sens es incoming box and retracts/releases blade for cut-off.
   Upper Blade Retract Sensor - Retracts/releases blade for cut-off. (The cut-off bracket is retracted to prevent premature tape cutting.)
   Box Exit Sensor - indicates completion of Box taping proces
   Box Exit Sensor - indicates completion of Box taping process.

6. **Air Pressure Regulator, Centering Guide Force Adjustment – Figure 7-15**
   This regulator is used to adjust Centering Guides according to weight of boxes. Pressure should be adequate to center boxes, but low enough to allow easy pushing of boxes under taping head.

. 7. **Air Pressure Regulator/Gauge, Upper Drive Counter Balance Adjustment – Figure 7-16**
   Set nominally to control "down" movement of upper drive assembly

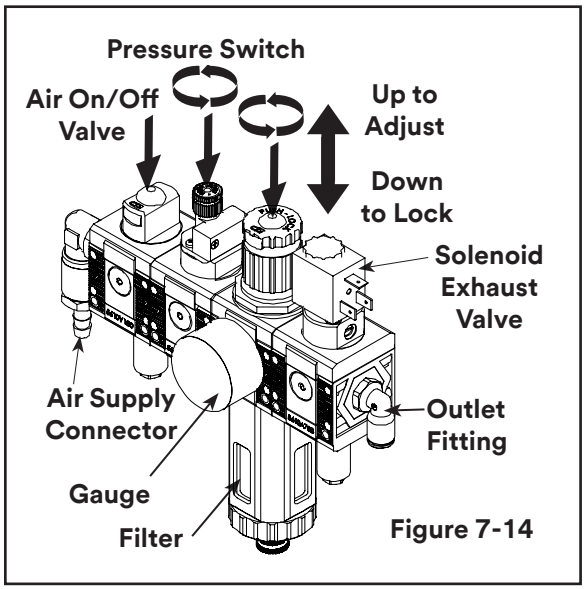


Figure 7-14

changed as necessary for the boxes being sealed to provide adequate drive belt pressure against the box which positively conveys boxes through the machine.

This Pressure Regulator acts as a "counter balance force" that equalizes air pressure on the Column Cylinders and keeps the Upper Drive Assembly from dropping too quickly from the raised position. If the boxes stop or hesitate, decrease the Regulator pressure (which will increase drive belt force on the box for more friction between the box and drive belts). Adjust setting as needed to allow ease of movement of boxes through machine.

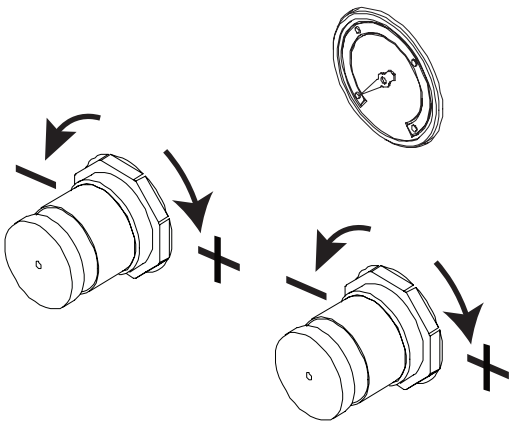


Figure 7-15
Air Regulator / Side Guides Centering Pressure

Figure 7-16
Air Regulator / Gauge / Upper Drive Counter Balance Pressure

For boxes which are fully packed with products that support the top flaps, adjustment of this regulator is not critical since the boxes can support pressure of upper frame at a wide range of regulator settings.

However, if under-filled or fragile boxes are to be sealed, this regulator can be used to set the upper frame to a higher pressure that is adequate for conveying boxes through the machine while also allowing upper assembly to descend on box (preventing box damage).

Note – A precision regulator is used to balance upper drive assembly. Due to the self relieving feature of this regulator a small amount of air will continually vent to atmosphere. This is normal and amounts to approximately 3 liter/min [0.1 SCFM].

8. **Main Air Pressure Gauge -** Indicates main air regulator pressure setting. Air regulator should be adjusted so gauge reads 6.2 bar gauge pressure [90 PSIG].

9. **Mechanical Latch, Upper Drive Assembly (Figure 7-17)** Both columns have a mechanical latch to hold the upper drive assembly at the fully raised position for tape threading and maintenance.

   To raise and latch upper assembly:

   1. Push and hold upper frame raising switch “A”.
   2. Push and hold latching knob(s) “B”.
   3. Release switch “A”.
   4. Release knob(s) “B”.
   5. Shut off air supply.

   To release/lower the upper assembly:

   1. Turn on air supply.
   2. Push and release switch “A”.

10. **Upper Drive Pressure Gauge** As indicated in Air Pressure Regulator / Gauge, Upper Drive Counter Balance Force Adjustment, Upper Drive Pressure Gauge is used as indicator of “counter balance force” that equalizes air pressure on the Column Cylinders and keeps Upper Assembly from dropping too quickly from raised position. Adjust force higher (+)/ Lower (-) to equalize and create balance.

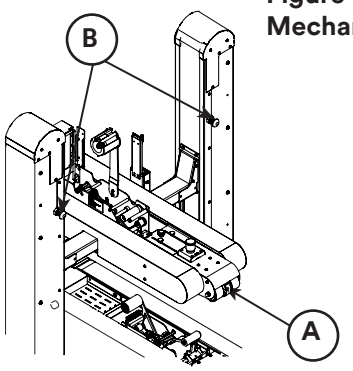


Figure 7-17 Mechanical Latch

Important – Before turning drive belts on, be sure no tools/objects are on the conveyor bed.

11. **Electrical Circuit Breaker/Fuse Box -** Houses DC Power Supply for Circuit Breaker, Fuse Box, Proximity Sensor, Machine and Tam (Option) Photo Sensors, Control Relays, Motor(s) Contactor, and Programmable Logic Controller (PLC) for Machine Control Functions.

12. **Box Centering Width Adjustment -** This knob limits the Side Guides from fully opening to more efficiently accomodate the width of box to be sealed. By limiting the Side Guides, the user is able to increase speed of the taping process. It is especially efficient if narrower boxes are being sealed. Turning the adjustment knob Clockwise (CW) limits the “maximum opening width” and turning the knob Counter Clockwise (CCW) increases the “opening width”.

⚠ Warning

- To reduce the risk associated with pinch and entanglement hazards:
- Keep hands clear of the upper head support assembly as boxes are transported through the machine.
- Keep hands, hair, loose clothing, and jewelry away from box compression rollers and all moving parts.
- Always feed boxes into the machine by pushing only from the end of box.

7.13 Box Sealing

1. Turn main air valve to “SUP” (On).
2. Release E-Stop Button. Press Reset Button. Press Start Button. This process starts the drive belts and pneumatic operations.
3. Feed boxes to machine allowing previous box to exit machine BEFORE feeding next box.
4. Turn electrical/pneumatic switches “Off” when machine is not in use.
5. Reload and thread tape as needed.
6. Be sure machine is cleaned and lubricated according to recommendations in **“Maintenance”** section of this manual.

7.14 Completion of Taping Heads

See **Manual 2** for Complete Instructions:

1. Place the Upper Taping Head in a convenient working position
2. Use **Figure 7-18** and tape threading label. Position the tape supply roll so the adhesive side of tape is facing the front of the taping head as it is pulled from the supply roll.
3. Thread tape over dancer arm roller (if dancer arm used). Guide tape around tension wrap roller **(Position 1)** then around one-way tension roller **(Position 2)**.
4. Pull it over knurled roller so adhesive side is in contact with this roller **(Position 3)**.
5. Pull tape down over tab adjustment roller. Pull it under knurled roller and between crescent tape guide and support pad **(Position 4)** The tape should extend ½”/ 13mm past the applying/compression roller)**.**
6. Cut away excess tape and repeat steps for Lower Taping Head.

Important – Do not cut against apply roller - roller damage could occur.

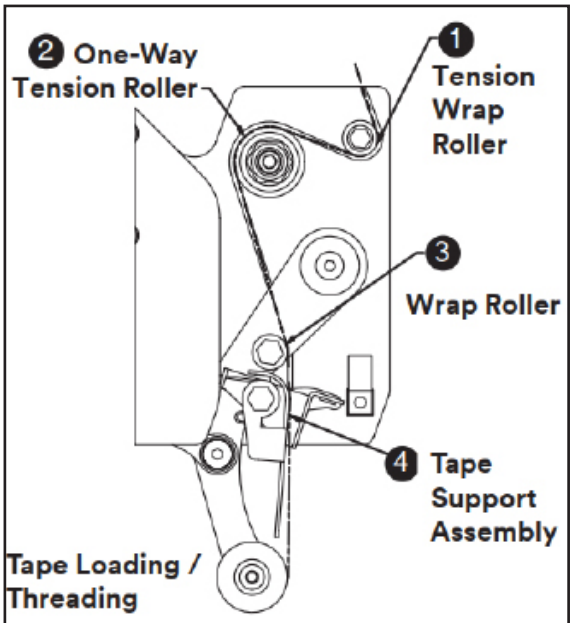


Figure 7-18

7.15 Preliminary Electric Inspection

Before connecting the machine to the mains please carry out the following operations:

7.15.1 Make sure that the socket is provided with an earth protection circuit and that both the mains voltage and the frequency match the specifications on the name plate.

7.15.2 Check that the connection of the machine to mains meets the safety regulations in your country.

7.15.3 Refer to the Machine Name Plate and

7.16 Machine Connection to the Mains

(For technical specifications: **See Section 4 - Specifications).**

- Push the LATCHING EMERGENCY STOP BUTTON.
- The main switch normally turned OFF.

Connect the power cord supplied to a wall socket using a plug which complies with safety regulations of your country.

7.17 Tape Application Monitor (TAM) Installation (Optional)

The Tape Application Monitor is an optional accessory that comes completely installed on your 3M-Matic case sealer at time of order. The TAM has 4 operational modes. It can be (1) turned off with no tape montitoring, (2) both top and bottom taping head monitoring, (3) top head only monitoring, (4) bottom head only monitoring.

The sensors are pre-set at the factory but can be repositioned to point at a new low tape roll change location according to production needs **(See Figure 7-19 and Section 8).**

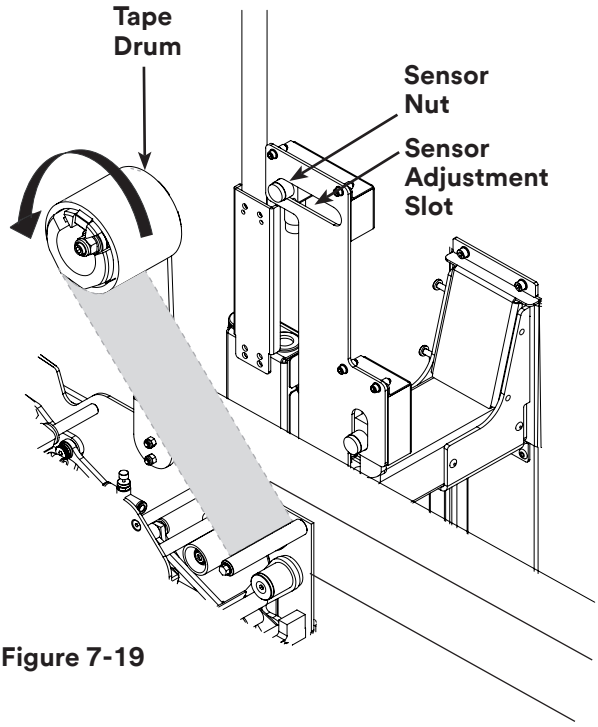


Figure 7-19

Warning

- To reduce the risk associated with mechanical and electrical hazards:
- Read, understand, and follow all safety and operating instructions before operating or servicing the case sealer.
- Allow only properly trained and qualified personnel to operate and service this equipment.

Changing TAM Function and Configuration:

Important: This operation is completed with the electrical enclosure open and must be completed by qualified personel.

1. Turn machine Off

Press the STOP push button. Ensure Reset button on start/stop station is illuminated

2. Locate the 2 TAM Toggle switches and light assembly (Fig 7-20, 7-21)

The toggle switches are located in lower left corner of the electrical enclosure. The multi-color light is located on the top of the column assembly. The TAM Enable switch provides the ability to disengage the monitoring function. The TAM Configuration switch provides the ability to change the monitoring functions to meet process requirements.

Electrical Panel

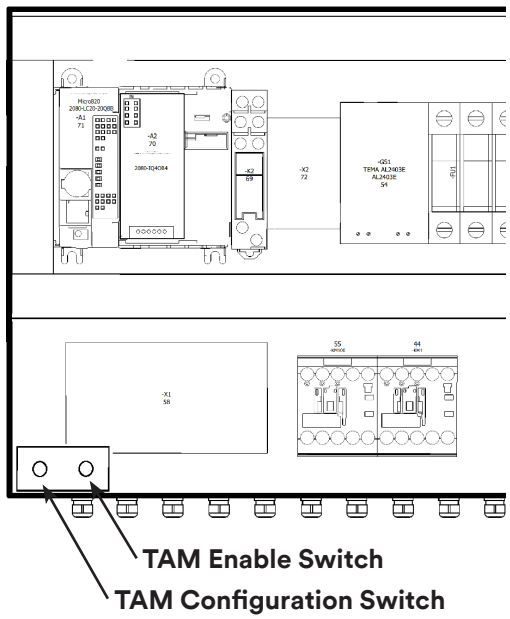


Figure 7-20

3. Enable the TAM Function

A steady green light on the column light assembly will indicate the TAM is enabled when the machine is running. If the green light is not present, place the TAM enable switch in the ON (UP) position to enable Tape Monitoring. Monitoring must be enabled to change the TAM configuration.

4. Determining the current TAM Mode

To determine or verify the current mode, watch the column light assembly on machine powerup. The light assembly will flash white with the number of flashes corresponding to the software revision level installed in the PLC. This will be fol lowed by a flashing color corresponding to the current TAM mode (See Chart)

NOTE: The program revision and mode will be indicated on on each instance of machine power-up and can also be observed on the On/Off push button station as well as the yellow lights mounted in the middle of the main columns. (fig, 7-21)

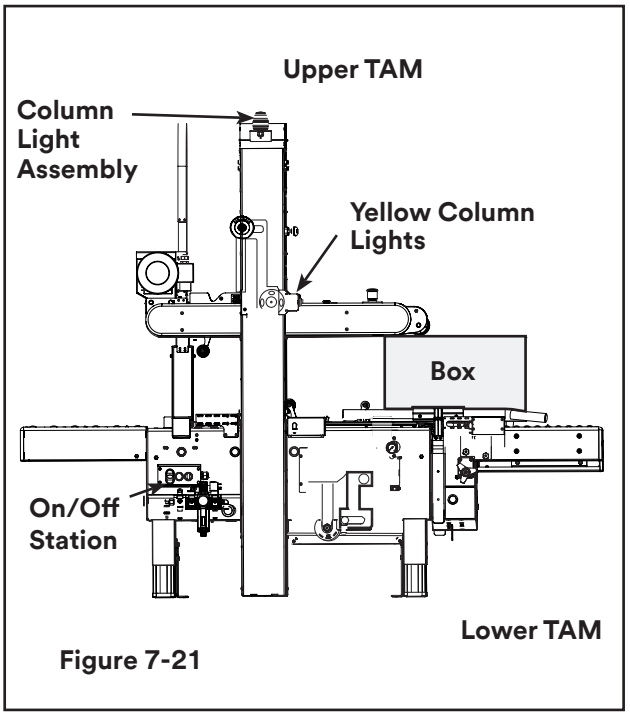


Figure 7-21

5. Use the Configuration Toggle switch to change TAM mode

To change the mode, cycle the configuration toggle switch (Off>On>Off). The toggle switches are disabled while the light is flashing. The light must stop flashing before attempting to go to the next state. The light assembly will flash in the color corresponding to the mode. Repeat this process until the column light assembly flashes the color matching the monitoring required for your application.

The selection process will step through the modes in order (1, 2, 3, 4, 1....) until the appropriate mode is reached.

FLASHING	GREEN	BOTH Heads Enabled
FLASHING	RED	UPPER Head Only Enabled
FLASHING	PURPLE	LOWER Head Only Enabled

IMPORTANT: Ensure the TAM Configuration Toggle switch is in the OFF/Down position after mode selection and when running the machine.

6. Low Tape Sensing and Indication

The machine is equipped with low tape sensing of the upper and lower taping head supply roll. The low tape sensing function will monitor the upper, lower or both tape supply rolls. This feature is determined by the current TAM mode setting and which tape sensor(s) are active. The low tape sensing function will remain active even when tape monitoring is disabled. The column light assembly will present a steady yellow light when the predetermined low tape condition is reached.

8. Theory of Operation

Description of the Working Cycle

8.1 Air Supply/Starting Machine/Operation

Air Supply:
The air supply powers movement of centering guides and upper drive assembly to automatically adjust the case sealer to the size of box being sealed.

Be sure that the air valve is rotated to "ON" position and main pressure gauge is reading 90 psi **(Figure 8-1)**.

Starting/Machine Operation:
- Check that E-Stop is released **(Figure 8-2)**. If E-Stop engaged, release E-Stop.
- Press Reset Button.
- Press Start Button (ready lights should illuminate indicating machine is ready for a box and lights turn off when box is in taping process **(Figure 8-3)**.

Note: In normal "Start/Stop"operations, using reset button is not necessary.

Reset:
A reset is required for the following:

- Powering up machine.
- After E-Stop has been engaged.
- After a fault occurs (i.e. box jam, taping issue, etc.).

Note: Ready Lights will automatically illuminate when machine is ready for next box.

8.2 Photo Sensors / Raising Switch

Box Centering Photo Sensor:
The Box Centering Photo Sensor is activated as box is presented and forwarded on infeed conveyor **(Figure 8-4)**.

The box centering system is triggered in the Programmable Logic Controller (PLC) located in the Electrical Control Box **(Figure 8-4)**.

(continued on next page)

Figure 8-1

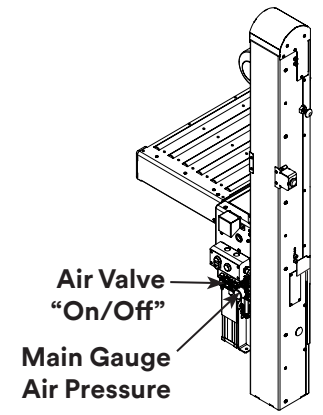


Figure 8-2

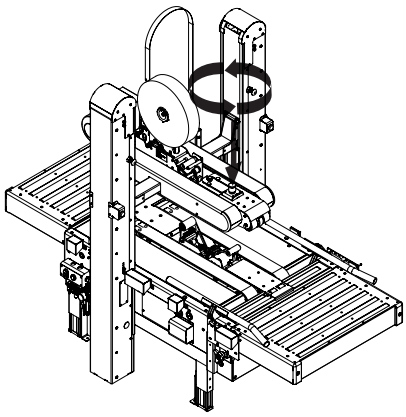
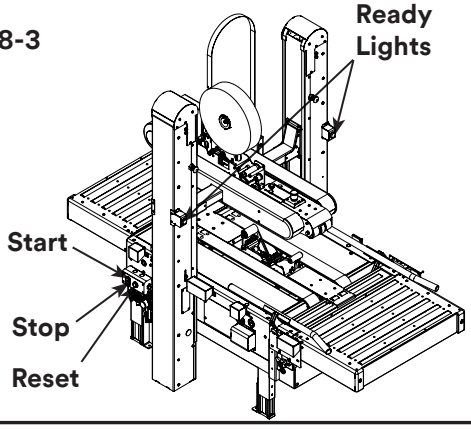
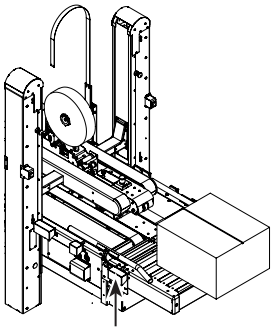


Figure 8-3





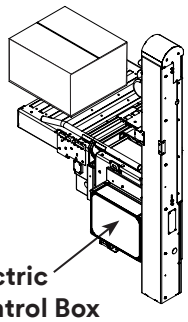


Figure 8-4

8. Theory of Operation

(continued)

The PLC **(Figure 8-5)** signals the centering guides solenoid valve causing the air cylinder Box Centering Guides to move inward and centering the box **(Figure 8-6).**

Note: Centering Guide force can be adjusted by the centering pressure regulator and flow controls **(See Adjustments Section 11 and Figure 8-6).**

Upper Assembly Raise Switch:
Once the box has been centered, push box forward against Upper Assembly Raise Switch **(Figure 8-7).**

The Programmable Logic Controller (PLC) also signals the upper assembly lift solenoid valve causing the air cylinder to raise the Upper Drive Assembly.

The Upper Drive Assembly lifts above box height so box can move forward under Upper Assembly **(Figure 8-8).**

Note: Lift force is controlled by the main air pressure setting **(See Adjustment Section).**

As box is pushed forward under Upper Drive Assembly, Upper Assembly Raise Switch releases and Programmed Logic Control (PLC) allows upper drive assembly to descend on top of box.

At this point, Drive Belts are triggered and automatically convey box into the machine **(Figure 8-8).**

Note: All Sensors on Machine are adjustable. Loosen, re-adjust, and re-tighten as needed to facilitate efficient box sealing results.

Also be sure to Sensor Cord is pointed downward / vertically.

(continued on next page)

Figure 8-5

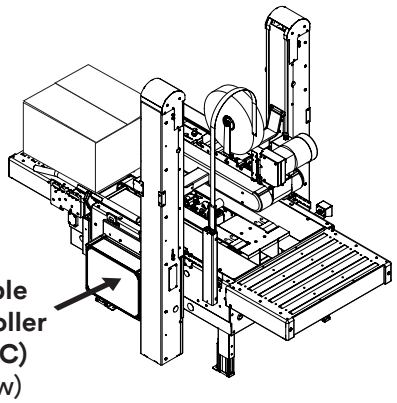


Figure 8-6

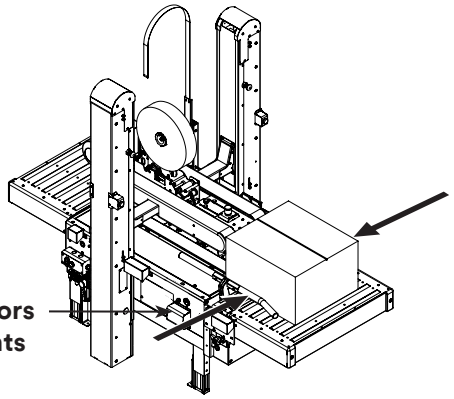


Figure 8-7

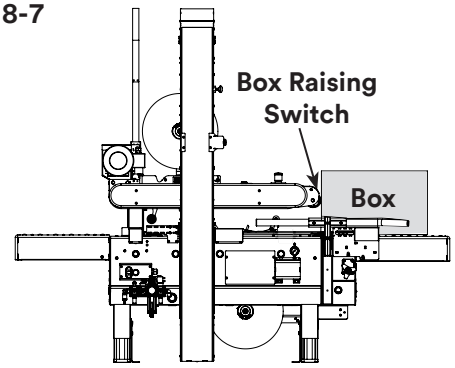
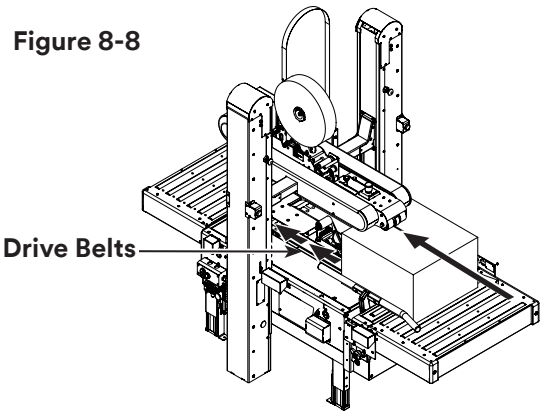


Figure 8-8



8. Theory of Operation

(continued)

Box Centering Photo Sensor:
As box proceeds through taping process and front edge of box passes the centering photo sensor, box centering guides are activated. As box trailing edge passes the box centering photo sensor, the guides are deactivated releasing centering solenoid valve **(Figure 8-9)**. The centering guides then are returned to their original open position **(Figure 8-10)**.

Note: For Longer Boxes, Centering Guides are automatically released after a set period of time.

Blade Retract (Cut-Off) Photo Sensors:
Detects the leading edge of the box. This signal is used by the PLC to retract the blade cut-off bracket preventing crushing of box and premature cutting of the tape. It also signals the start of the taping cycle. (**Figure 8-10**).

When the trailing edge of box is detected by Blade Retract (Cut-Off) Photo Sensors, the Programmable Logic Controller program (PLC) deactivates the blade retract solenoid valve cutting the tape which completes the taping process (**Figure 8-11**).

Note: Both Upper and Lower Taping Heads have a photo sensor. These sensors are spaced in direct proportion to the offset position of taping heads.

Box Exit Photo Sensor:
As the trailing edge of box passes the Box Exit Photo Sensor, a signal is sent to PLC that taping cycle has been completed **(Figure 8-12).**

Note: A Programmed (PLC) "Watch Dog" timer will stop machine:

1) Box taping cycle is not completed within set period of time.
2) Box Jam
3) Any abnormal "event"

A manually activated E-Stop (emergency stop) is also provided for any abnormal events.

Note: Also refer to **Manual 2** for Taping Head adjustments.

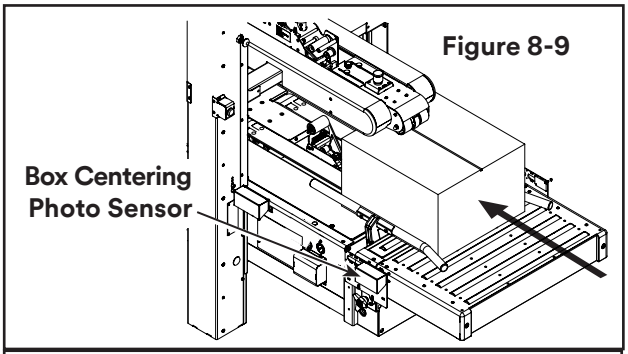


Figure 8-9

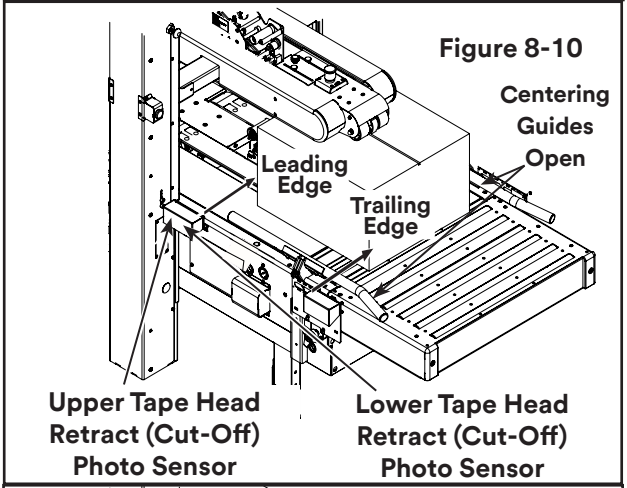


Figure 8-10

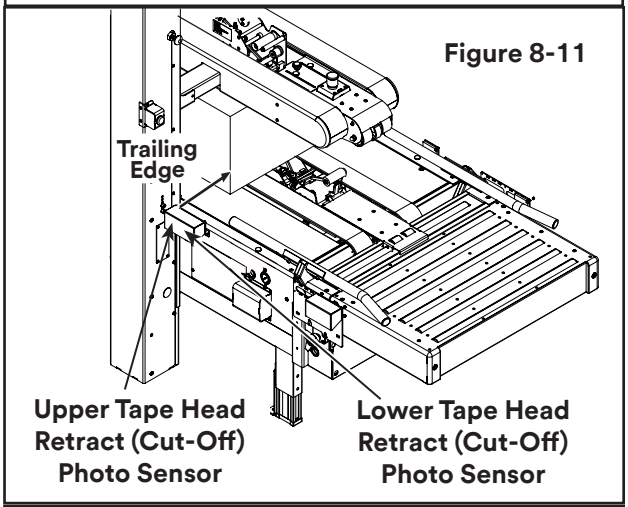


Figure 8-11

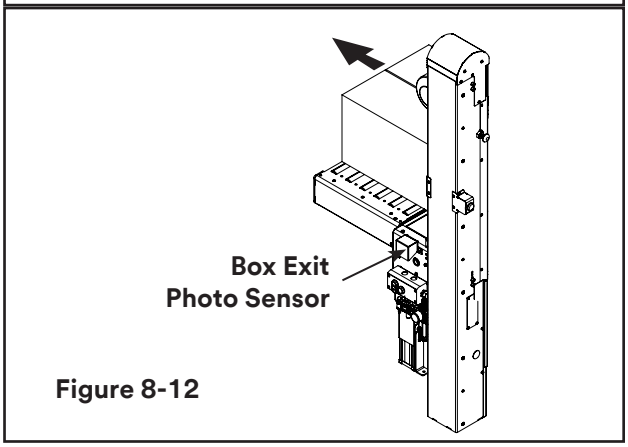


Figure 8-12

8. Theory of Operation

8.3 Tape Application Monitor (TAM) Operation (Optional)

To set the operational state of the Tape Moni toring System, refer to the “Installation” Sec tion of this manual

The Tape Application Monitor (TAM) provides a visual indication of faults that can occur during the tape application process.

These visually indicated faults include:

- improper tape application
- no tape applied
- broken or incomplete tape application
- tape was not cut at end of taping cycle

The Tape Application Monitor (TAM) will indicate the type of fault by a predesignated light beacon color **(See Chart).** The machine will stop operating when a fault is indicated (except with a low tape signal). TAM operations are controlled by information received in the Programmable Logic Control (PLC) from Five (4) sensors **(Figure 8-13):**

1) Box Present/Lower Cut-Off Retract (Position a)
2) Upper Cut-Off Retract (Position b)
3) Tape Dispensing (Position c)
4) Low Tape Sensor (Position d)

Two (2) of these Sensors, Box Present/Lower Cut-Off Retract and the Upper Cut-Off Re tract are located on the machine bed (**Figure 8-14**).
These sensors are responsible for standard machine control functions and are used in conjuction with the optional Tape Application Monitor (TAM) system (if installed).

The Box Present Sensor/Lower Cut-Off Re tract (a) signals the presence of a box and the start of taping cycle. This sensor as well as the Upper Cut-Off Retract Sensor (b) signal the end of the tape dispensing operation for each taping head - see Sensor Positions (**Figure 8-13 and 8-14**). When tape is dis pensed to the point where the roll no longer blocks the sensor, an indicator light is illumi nated on the Beacon Signal Light **(Figure 8-13).**

TAM Fault Signal Chart

Fault	Beacon Color	Beacon Signal
Lower Tape Head Fault	Purple	Flashing
Upper Tape Head Fault	Red	Flashing
Low Tape	Yellow	Solid
No Fault (running)	Green	Solid

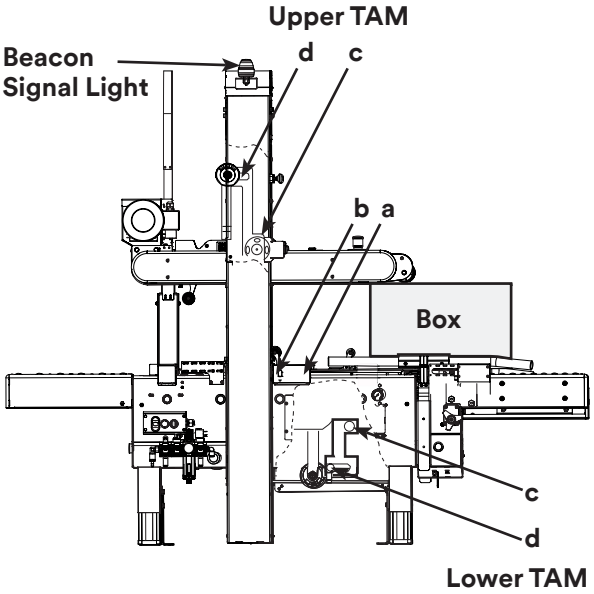


Figure 8-13

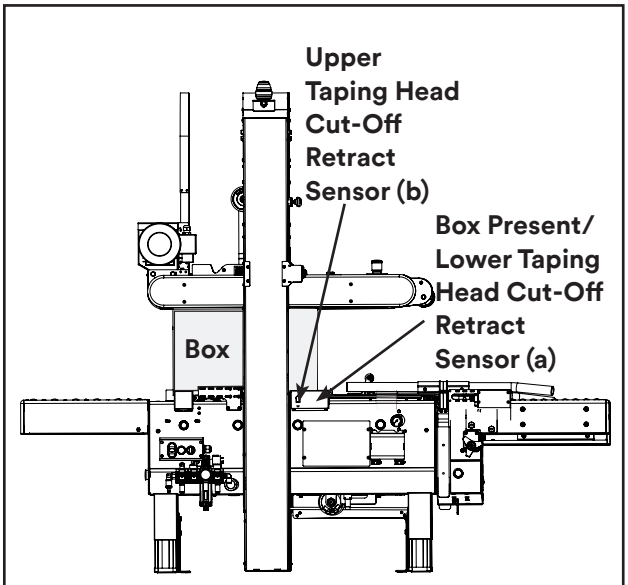
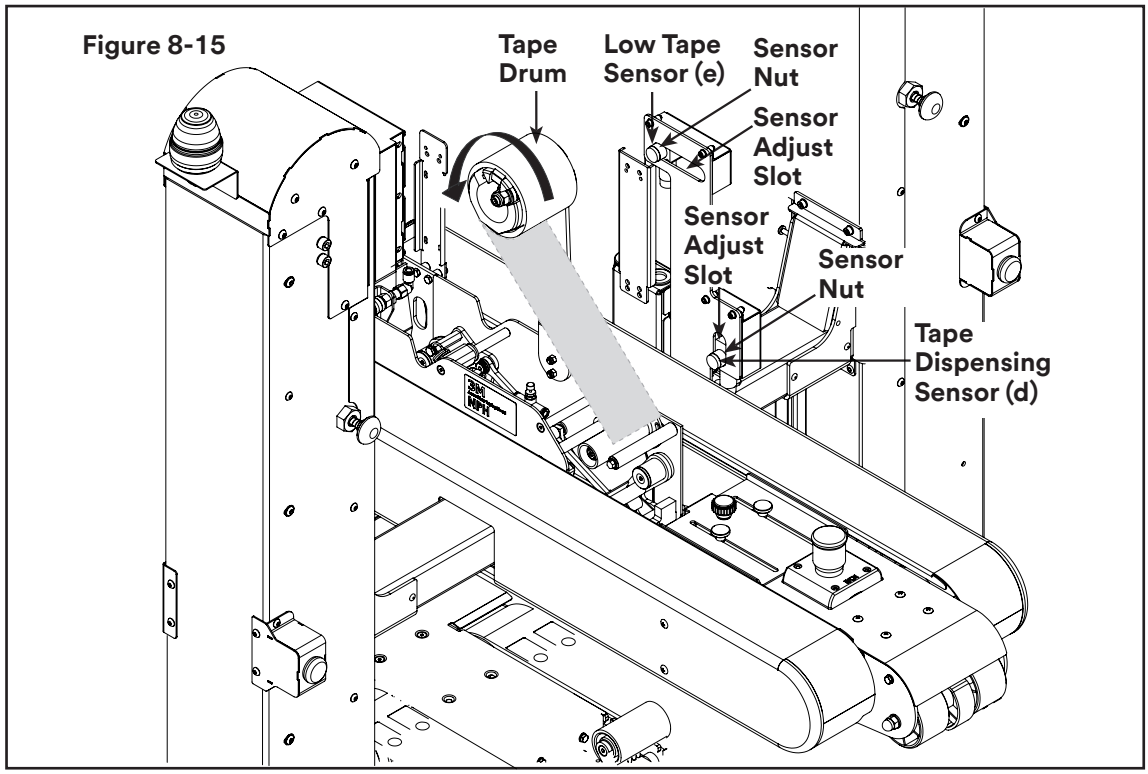


Figure 8-14

8. Theory of Operation

Figure 8-15



8.4 Tape Application Monitor (TAM) Sensors (Optional)

If a TAM is installed, two (2) photo sensors are installed on the Tape Application Monitor (TAM) Bracket. These sensors are located in close proximity to each taping head to be monitored and are pre-set at the factory. Both the Tape Dispensing/Application and Low Tape Sensors can be adjusted to meet production needs.

Tape Dispensing Sensor (Figures 8-13, 8-14, and 8-15):
The first sensor is a Tape Dispensing Monitor (c) that sends a pulsing signal as tape is being dispensed. This pulse is created by the sensor beam directed at the reflective disk mounted to the one way tension roller located oof the taping head.
The pulses are counted and registered from the beginning of the taping cycle, as the box is introduced at Box Present/Lower Cut-Off Retract Sensor (a) and until the trailing end of the box passes both this and the Upper Cut-Off Retract sensor (b). During proper tape applica tion, both the disk and roller turn sending pulses as tape is being applied. When the required pulse values do not meet expectations of a predetermined fault condition, a fault signal occurs and the taping process is stopped.

.

As explained above, the Tape Dispensing/Application Sensor beam is directed at the disk/hub located on the taping head. The reflective segments of the disk regiser a pulse as tape is being dispensed. The LED located on the sensor body will cycles on and off as tape is applied. if the LED is flashing as tape is dispensed, no adjustment is necessary, however, if the LED is not flashing on and off as tape is dispensed -

Re-Position the Tape Dispensing Sensor:

1). Loosen the sensor nut
2). Slide/Reposition sensor along the bracket slot
3). Tighten the sensor nut.

Re-adjust Tape Dispensing Sensor until LED properly switches on and off **(Figure 8-15).**

8. Theory of Operation

(continued)

Low Tape Sensor:
Indicating a low tape condition, the second TAM sensor (e) is a Low Tape Sensor which signals there is a low tape condition (only). This sensor is directed at the side of the tape roll. When tape is dispensed to a point where the roll no longer blocks the sensor, an indicator light illuminates the light beacon and signals the need to replace the existing roll with a new roll of tape **(Figures 8-15)**.

Positioning Low Tape Supply Sensor:
As explained, the low tape supply sensor looks at the side of the tape supply roll. Moving this sensor towards tape core allows more of the supply roll to be used before a low tape signal is illuminated. The amount of tape remaining on the roll is determined by the position of this sensor and should be set to production taping processes and tape replacement response time variables.

To Re-Position Low Tape Supply Sensor:

1). Loosen the sensor nut
2). Slide/Reposition sensor along the bracket slot
3). Tighten the sensor nut.

Re-adjust Low Tape Sensor as necessary to meet desired production needs **(Figure 8-15)**.

8.5 Clearing a Fault:

When a fault occurs, the machine automatically stops and a beacon light signals the type of fault **(See Fault Chart - Section 8.3).**

After removing the box, correct the fault and re-start machine by first pressing the reset button and then the start button **(Figure 8-16).**

Note: An E-Stop is provided for any emergency shut down of the machine.

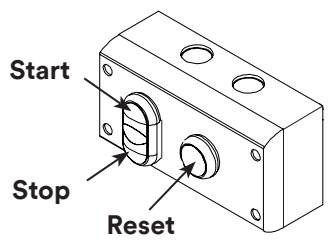


Figure 8-16

8.6 Box Spacing

If location of the box has not passed exit sensor before a new box has passed by the box present sensor. This creates a box spacing fault as shown in **Figure 8-17.**

Note: A minimum box 18" spacing must be maintained**.** Make necessary production adjustments to maintain minimum box spacing requirements.

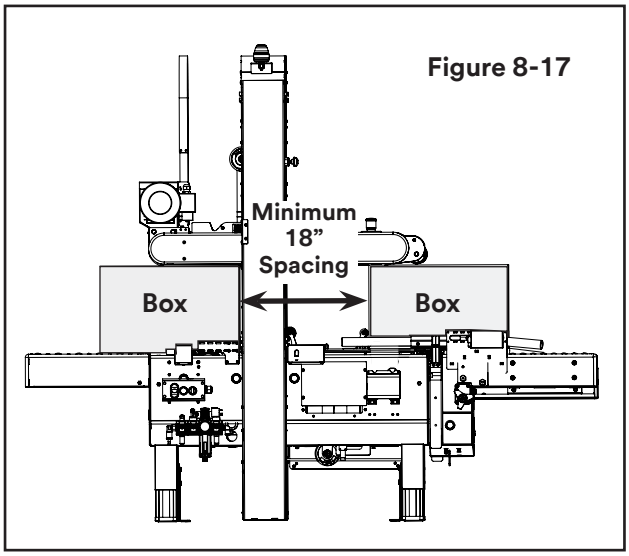


Figure 8-17

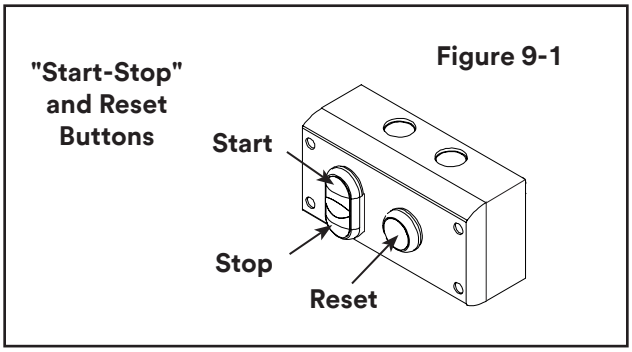
Warning

- **To reduce the risk associated with pinches, entanglement and hazardous voltage:**

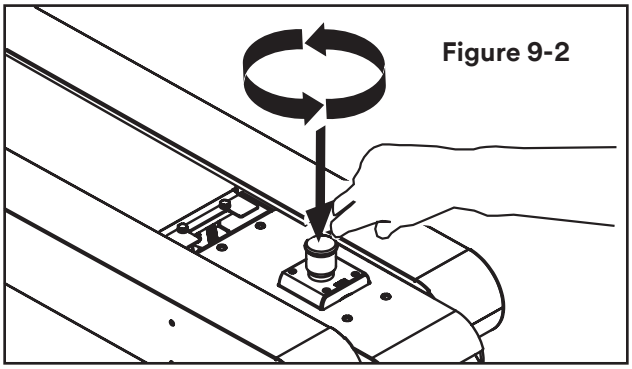
- Turn pneumatic and electrical supplies off and disconnect before performing any adjustments, maintenance or servicing the machine or taping heads.

9. Controls

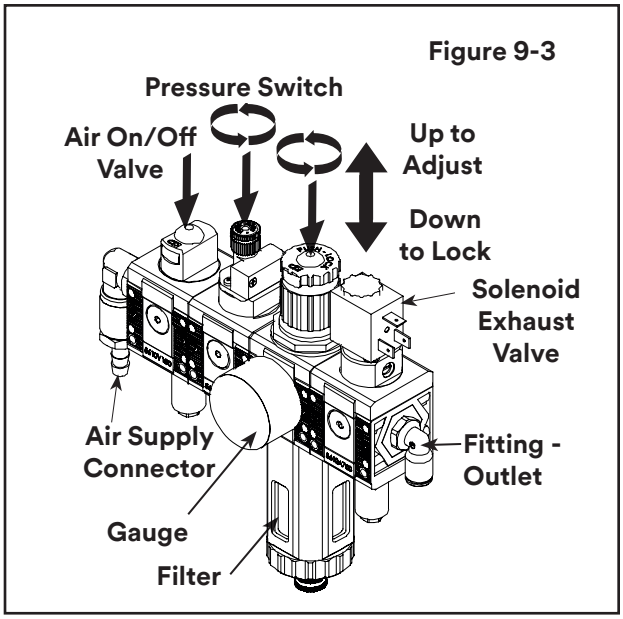
9.1 “Start/Stop” w/Reset Buttons



9.2 Latching Emergency Stop Button



9.3 Main Air On-Off Valve / Regulator / Filter



9.4 Upper Drive Box Raising Switch

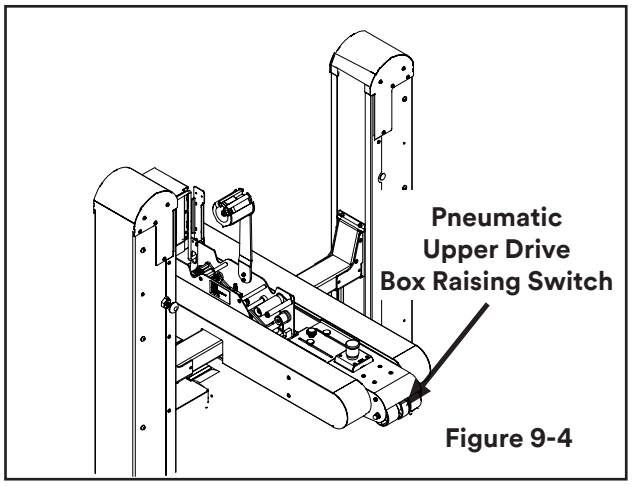


Figure 9-4

9.5 Operating Upper Drive Raising Switch
(activated by box pressure)

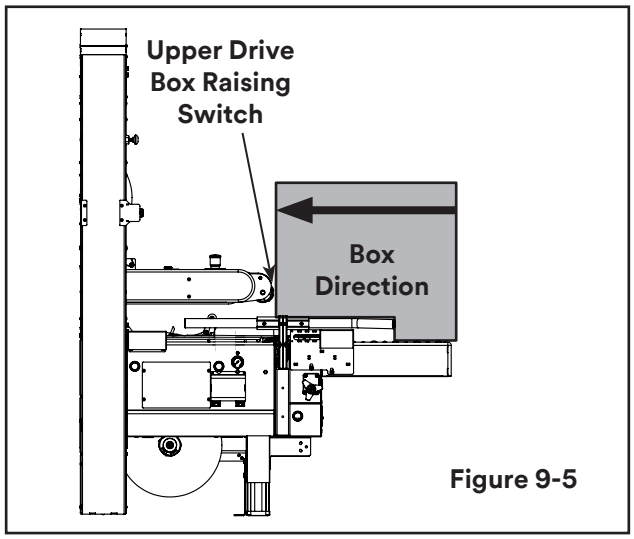


Figure 9-5

9.6 Air Pressure Regulator / Upper Drive Counter Balance Pressure Adjustment w/Gauge

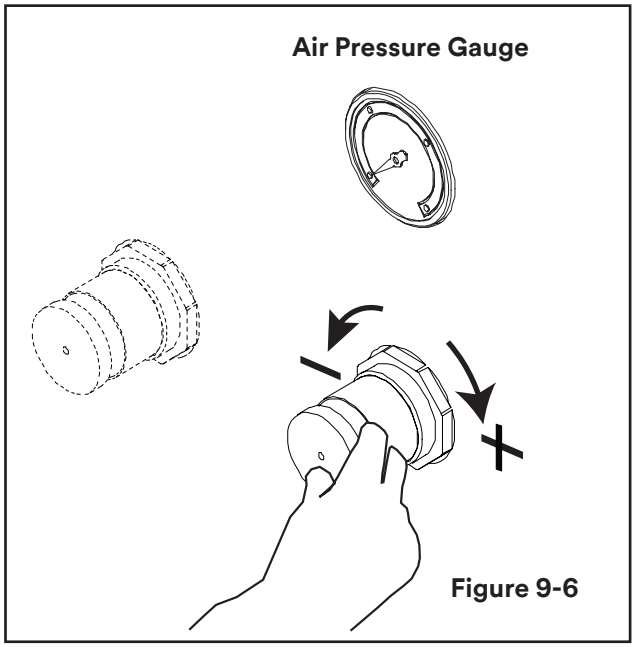


Figure 9-6

9.7 Air Pressure Regulator / Box Centering Side Guides Pressure Adjustment

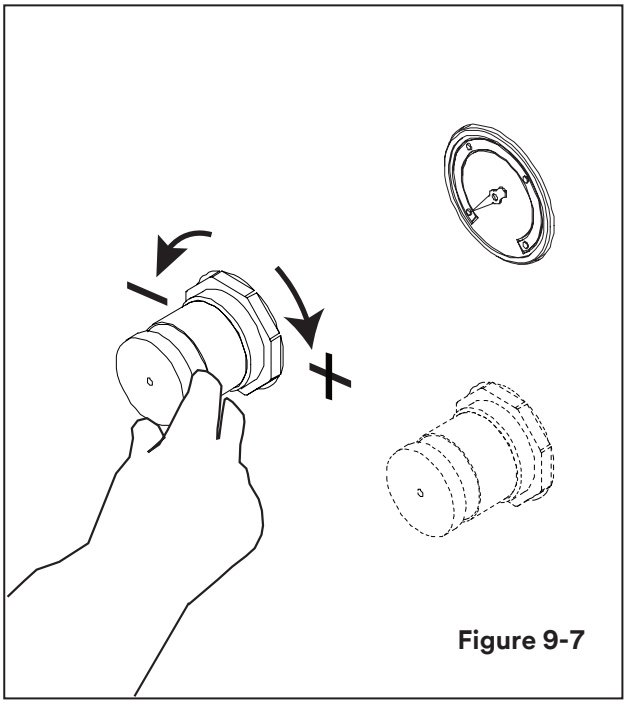


Figure 9-7

9.8 Box Conveying / Tape Seal Application

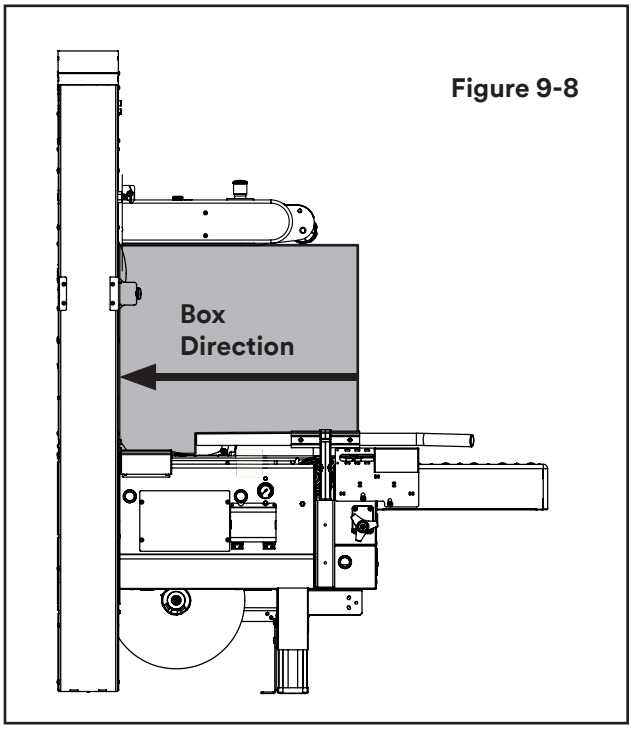


Figure 9-8

10. Safety Devices of the Machine

10.1 Blade Guards

Both the top and bottom taping units have a blade guard **(See Manual 2: AccuGlide™ V Taping Heads - 2" or 3").**

10.2 Emergency Stop Button

The box drive belts are turned on and off with the electric "Start/Stop" button on the side of the machine frame **(Figure 10-2).**

- To restart machine, rotate the emergency stop switch clockwise to release the switch latch **(Figure 10-1).**
- Then Press Reset Button **(Figure 10-2).**
- Then press the Station "Start" Button **(Figure 10-2).**

10.3 Electric System / Circuit Breaker

The electric system is protected by a ground wire whose continuity has been tested during final inspection. The system is also subject to insulation and dielectric strength tests.

Note: The case sealer has a circuit breaker located in the electrical enclosure on the machine frame. If circuit becomes overloaded and circuit breaker trips, unplug the machine electrical cord.

1. Determine cause of overload and correct.
2. Plug in machine.
3. Turn/Release E-Stop Button.
4. Press Reset and then "On" (I) Button to resume case sealing.

Important: The use of an extension cord is not recommended. However, if one is needed for temporary use, it must:

- Have a wire size of 1.6mm diameter [AWG 14]
- Have a maximum length of 7.5m [25 ft]
- Be properly grounded.

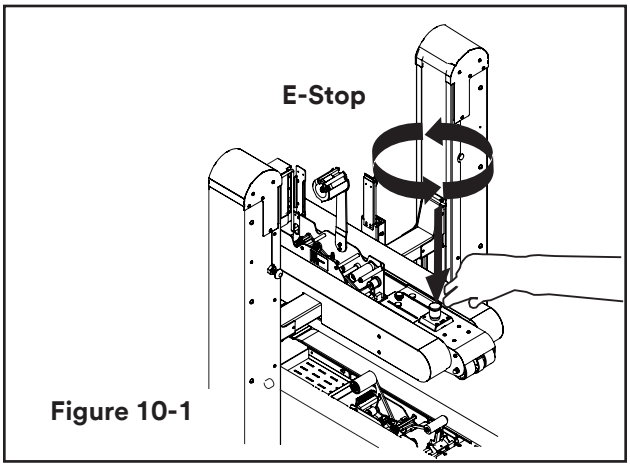


Figure 10-1

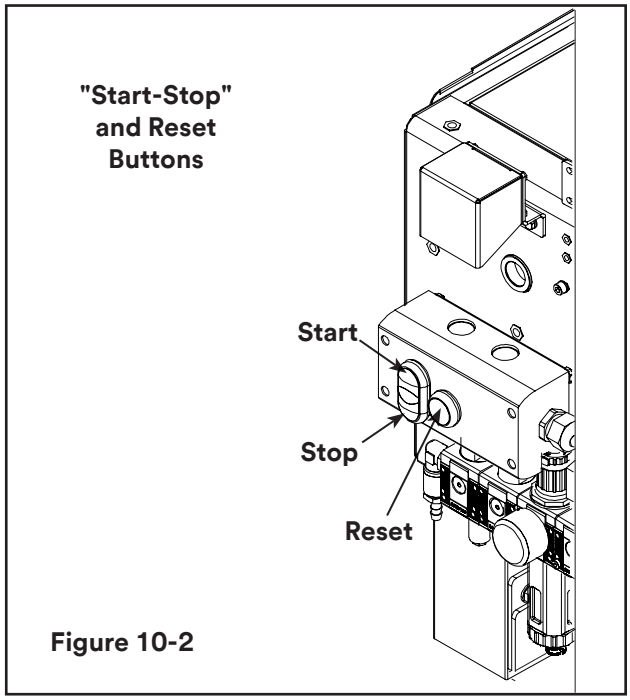


Figure 10-2

Warning

- To reduce the risk associated with hazardous voltage:
- Position electrical cord away from foot and vehicle traffic.

Warning

- To reduce the risk associated with mechanical and electrical hazards:
- Allow only properly trained and qualified personnel to operate and service this equipment.

11. Set-Up and Adjustments

11.1 Box Width Adjustment

Boxes are automatically centered by Side Guides. The Box Centering Guides are triggered by Box Centering Photo Sensor located on side of the infeed conveyor **(Figure 11-1).**

Side Guides air pressure adjustments can be made using Centering Guide Air Pressure Regulator **(Figure 11-1).**

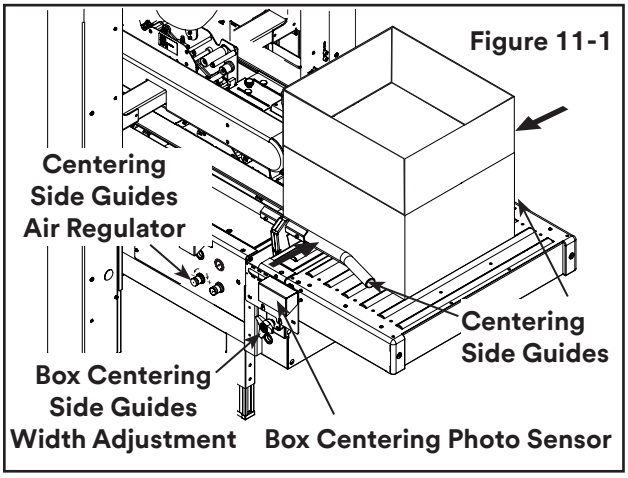


Figure 11-1

11.2 Box Height Adjustment

Box Height is automatically determined when the Upper Drive Assembly Box Raising Switch is activated by box pressure. The Box Raising Switch which located on the front of the Upper Drive Assembly **(See Figure 11-2).** Upper Drive air pressure adjustments can be made using the Air Counter Balance Pressure Regulator and Gauge for the Upper Drive Assembly **(See Figure 9-6).**

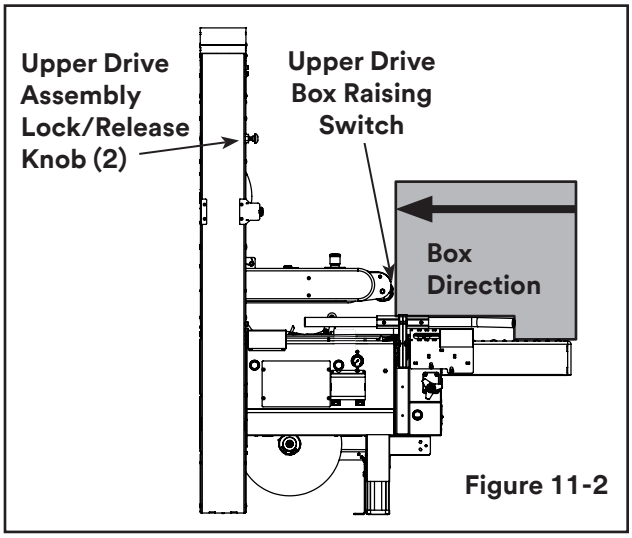


Figure 11-2

11.3 Box Centering Side Guides Width Adjustment

For Optimal Box processing speed, the maximum box width can be limited to width of boxes to be taped. Make this adjustment by turning the Adjusting Knob clockwise (decreasing maximum width) or Counterclockwise (increasing maximum width). This Knob Adjustment, in effect, allows for a “stop” that limits the Side Guides full position **(Figure 11-1).**

11.4 Removing Taping Heads

1. Activate Upper Drive Box Raising Switch to lift upper drive assembly. Use lock knobs to lock Upper Drive in raised position.
2. Turn off Electricity and Air Pressure.
3. Loosen plate knobs and slide Tape Head retaining plate forward **(Figure 11-3).**
4. Hold upper taping head applying and buffing arms from under upper assembly and slide tape head forward and down to remove**.**
5. For Lower Taping Head, slide head forward and lift.
6. Refer to **Manual 2** for additional taping head set-up instructions.
7. Replace taping heads reverse of disassembly before turning on air supply/electric power.
8. Unlatch Upper Drive Assembly and allowing Upper Drive to return to its rest position.

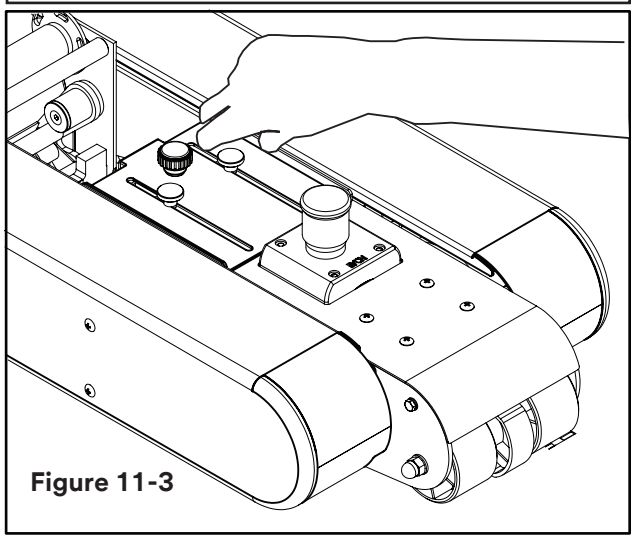


Figure 11-3

Warning

- To reduce the risk associated with sharp blade hazards:
  - Keep hands and fingers away from tape cutoff blades under orange blade guards. The blades are extremely sharp.

11.5 Run Boxes to Inspect Adjustment (Figures 11-4 and 11-5)

Important: Before starting machine, check to be sure no tools or other objects are on the conveyor bed.

Release E-Stop (if engaged), Press Reset Button, and then press Push Button Station "Start" **(Figure 11-4).** This starts the drive belts and engages the pneumatic air pressure system. Move box forward on the infeed conveyor until the Box Centering Photo Sensor is activated (which activates the Box Centering Side Guides and automatically centers the box - **Figure 11-5**). Continue moving the box forward until it contacts the Upper Drive Assembly Raise Switch (**Figure 11-5).** The Upper Drive Height adjustment adjusts automatically as the box is forwarded by the drive belts under the Upper Drive Assembly.

Note: Always push at the end of the box. If the box is not centered correctly or the Upper Drive Assembly does not contact the top of the box correctly, see pressure adjustment settings and/or the Troubleshooting Section.

Important – If drive belts are allowed to slip on box, excessive belt wear will occur.

Note - For belt replacement and tension specifications - refer to **Section 13 / Maintenance and Repairs.**

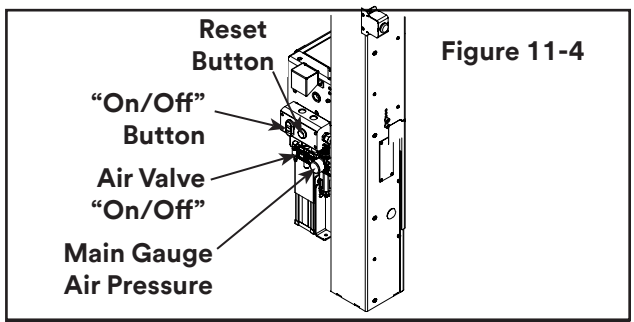


Figure 11-4

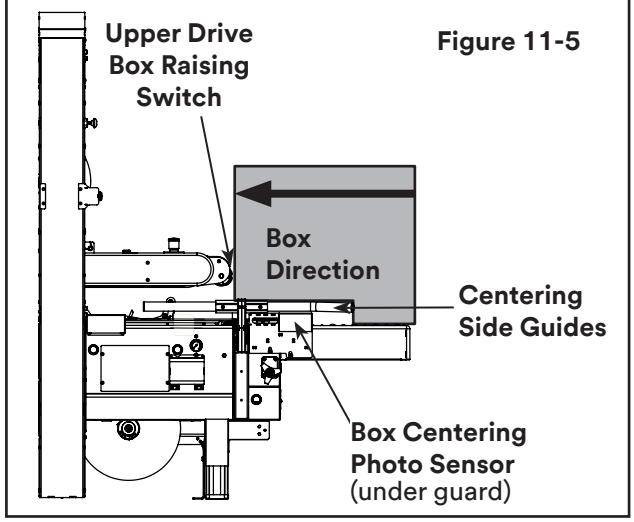


Figure 11-5

Warning

- To reduce the risk associated with pinch and entanglement hazards:
- Keep hands clear of the upper head support assembly as boxes are transported through the machine.
- Keep hands, hair, loose clothing, and jewelry away from box compression rollers and all moving parts.
- Always feed boxes into the machine by pushing only from the end of box.

11.6 Tape Application Monitor (TAM) Adjustments (Optional)

TAM Sensor Positioning adjustments can be "fine tuned" to help meet needed production requirements.

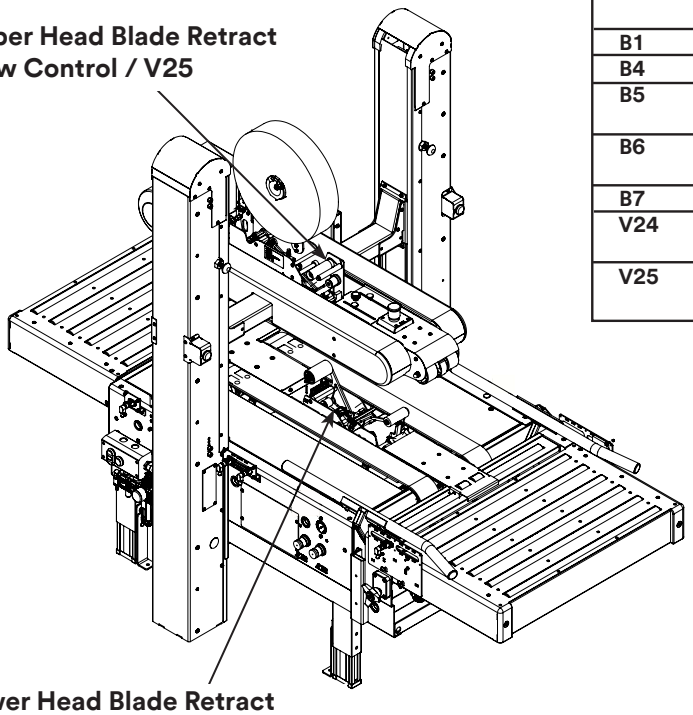
Warning

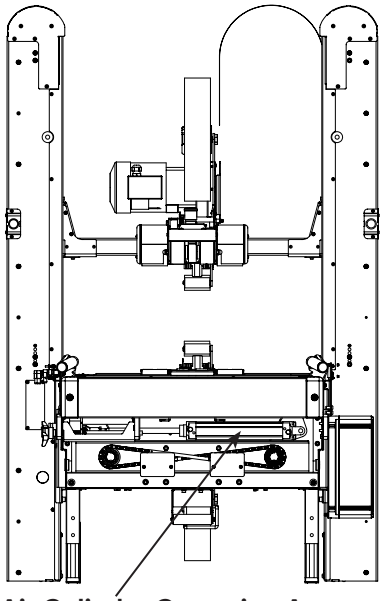
- **To reduce the risk associated with pinches, entanglement and hazardous voltage:**
- Turn pneumatic and electrical supply off and disconnect before performing any adjustments, maintenance or servicing the machine or taping heads.

11.7 Factory Settings

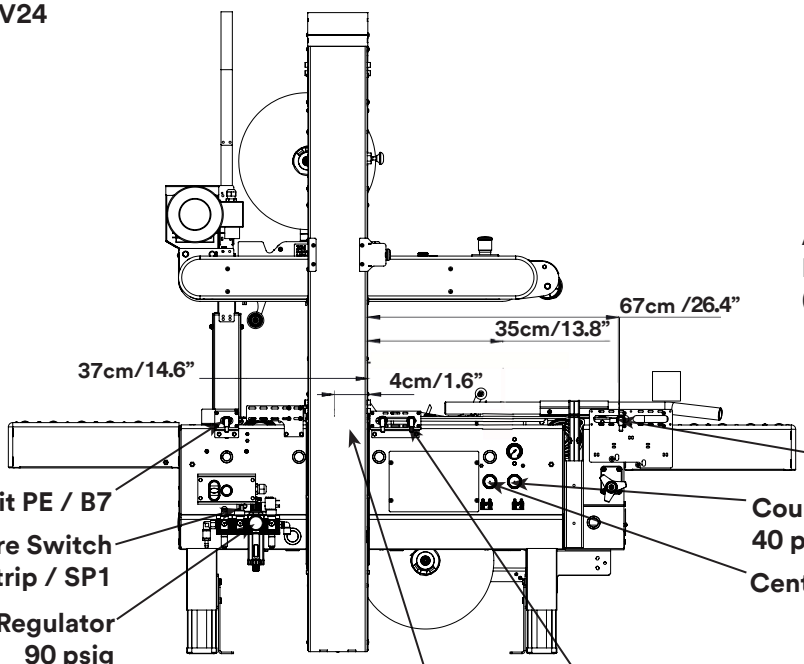
(also Refer to Electrical Schematics in **Section 16**)

Component Symbol	Description	Factory Setting
	Main Air Regulator	90 psig
R1	Counter Balance Regulator	30 psig
R2	Centering Arm Regulator	3.75 CW turns from full close (CCW position)
SP1	Main Pressue Switch	55 psig
V16	Air Cylinder Centering Arm - Flow Control - Guides open	2.5 CW turns from full open (CCW position)
V17	Air Cylinder Centering Arm - Flow Control - Guides closed	2.5 CW turns from full open (CCW position)
B1	Centering Arm PE	67cm/26.4" (front of column)
B4	Case Present PE	35cm/13.8 (front of column)
B5	Lower Head Blade Retract (Cut-Off) PE	11.5cm/4.5" (front of column)
B6	Upper Head Blade Retract ' (Cut-Off) PE	4cm/1.6" (behind column)
B7	Case Exit PE	37cm/14.6" (front of column)
V24	Lower Head Blade Retract Flow Control	3 turns CW from full open (CCW position)
V25	Upper Head Blade Retract Flow Control	3 turns CW from full open (CCW position)





Air Cylinder Centering Arm
Flow Control / V16 and V17
(Proper setting 12 - 12.5 lbf)



12. Operation

12.1 Operator's Working Position and Operational Flow (Figure 12-1).

Once the box has been filled, close its top flaps and push it between the top and bottom drive belts. Always keep hands in position as shown in **Figure 12-2.** The box will be automatically sealed with adhesive tape on top and bottom box seams. Box then finishes taping process and is released.

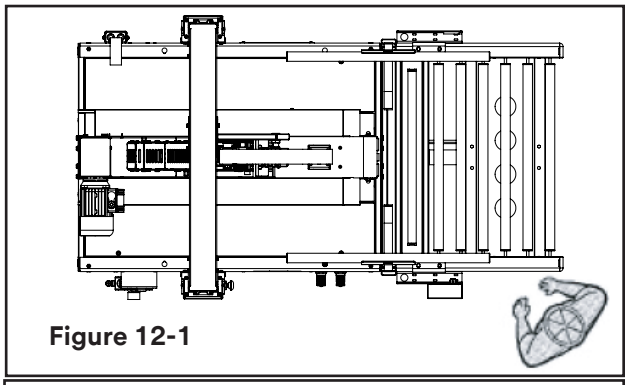


Figure 12-1

12.2 Starting the Machine

Important: Before starting the machine, be sure no tools or objects are on conveyor bed.

Let the machine run without cartons and check its safety devices.

Then start the working cycle.

12.3 Starting Production

After adjusting machine to box dimensions (height-width), let machine run without cartons and check safety devices.

Then start working cycle.

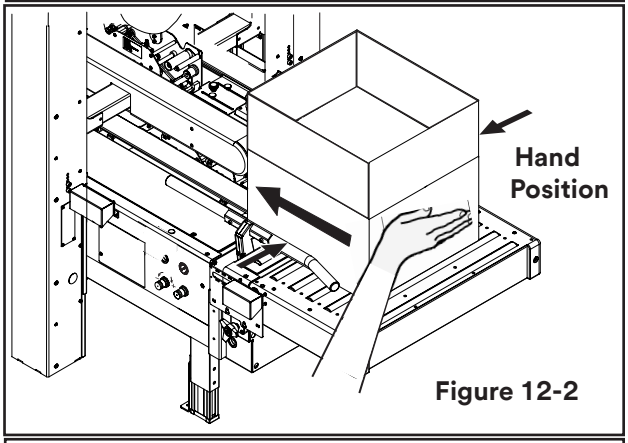


Figure 12-2

12.4 Tape Replacement and Threading

See Manual 2: AccuGlide™ 4 Taping Heads - 2 Inch or 3 Inch. Press the LATCHING EMERGENCY STOP BUTTON.

12.5 Box Size Adjustment

Repeat all the operations shown in **Section 11 - Set-Up/Adjustments.**

12.6 Cleaning

Before carrying out cleaning or maintenance operation, stop the machine by turning OFF (O) switch on main and disconnect pneumatic and electric power **(Figure 12-3).**

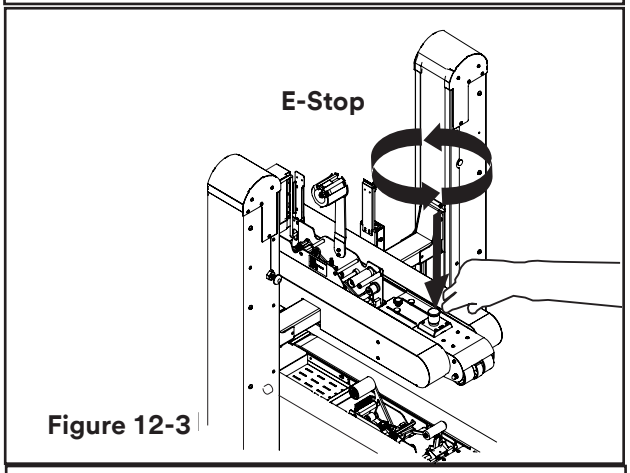


Figure 12-3

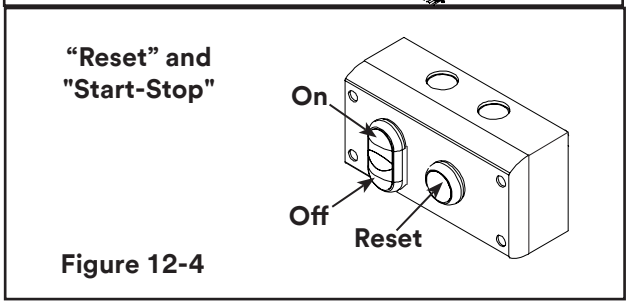


Figure 12-4

12.7 Table of Operation Adjustments - Operator Qualifications

1	Tape loading and threading	1
2	Tape web alignment	1
3	Adjustment/one way tension roller	1
4	Adjustment to box size (H and W)	1
5	Top flap compression rollers	1
6	Adjustment of tape applying spring	1
7	Conveyor bed height adjustment	1
8	Special Adjust-Changing tape leg	2
9	Special Adjust-Column re-position	2

12.8 Safety Devices Inspection

1. Taping units blade guard
2. Latching emergency stop button
3. STOP (OFF) (O) Button

12.9 Trouble Shooting Guide

(also Refer to Factory Settings in **Section 11**)

Problem	Cause	Correction
Drive Belts do not convey boxes	Narrow boxes	Check machine specifications. Boxes are narrower than recommended (causing slippage and premature belt wear).
	Worn Drive Belts	Replace Drive Belts
	Upper Taping Head does not apply enough pressure	Adjust the Upper Drive Assembly Counter Balance Regulator to increase force against top of box.
Drive Belts do not turn	Worn or missing Friction Rings	Replace Friction Rings
	Drive Belt tension too low	Adjust Drive Belt tension
	Electrical disconnect	Check power and electrical plug
	Circuit breaker not at correct setting	Set to correct current value
	Motor not turning	Evaluate problem and correct
Drive Belts break	Worn belt	Replace belt
Squeaking noise as boxes pass through machine	Dry Column Bearings	Lubricate Column Bearings
	Defective Column Bearings	Replace Column Bearings
Tape not centered on box seam	Tape Drum not centered	Reposition Tape Drum
	Centering Guides not centered	Adjust Centering Guides
	Box flaps not of equal length	Check box specifications
Upper Drive Assembly does not move up, moves up slowly or fails to operate	Main air pressure is too low	Disconnect the air supply. Make sure main pressure regulator reads zero. Reconnect air supply and adjust regulator to read 90 PSIG [6.2 bar].
	Defective or incorrect position setting Upper Drive Raising Switch.	Adjust/Replace Raising Switch
	Defective Upper Drive Raising Switch Solenoid Valve	Replace Upper Drive Raising Switch Solenoid Valve
Upper taping head does not move down at the end of Taping Cycle	Upper Assembly Counter Balance Pressure set too high	Adjust Counter Balance Pressure to reduce pressure
	Defective Upper Drive Assembly Counter Balance Regulator	Replace Regulator
	Defective One-Way Valve	Replace One-Way Valve
	Defective Head Raising Solenoid Valve	Replace Solenoid Valve

(*continued*)

12.9 Trouble Shooting Guide (*continued*)

Problem	Cause	Correction
Upper Drive Assembly comes down too fast/hard or fails to operate	Upper Drive Assembly Counter Balance Regulator pressure set too low Defective Upper Drive Assembly Counter Balance Regulator	Adjust Counter Balance Pressure to increase pressure Replace regulator
Centering Guides move slower than normal or fail to operate	Centering Guide Regulator pressure set too low Centering Guide Cylinder Speed Controls need correct adjustment Defective Centering Guide Solenoid Valve/photo eye sensor misaligned with sensor receptor	Adjust Centering Guide Regulator Adjust Speed Controls mounted on Centering Guide Cylinder Replace Valve / Realign Photo Eye Sensor and Sensor Receptacle
Centering Guides don't open 3 seconds after box removed from machine Machine Signals Case Fault Jam after Guides Fail to Open	Centering Guide Photo Eye Sensor "seeing" Guides as they close Centering Guide Photo Eye Sensor incorrect Height Setting	Adjust Height of Photo Eye Sensor lower than Centering Guides Adjust Closing Width of Centering Guides (minimum closing width = 7.124") Adjust Height of Photo Eye Sensor lower than Centering Guides when they are Completely Closed
Can't clear TAM Fault Condition	Sensor incorrect position Sensor Failed Absorption Pad damaged or missing	Re-Position Sensor Replace Replace
Yellow Column Lights Solid and Flashing (also see TAM instructions)	Low Tape (Solid Yellow) Box Jam (Flashing Yellow) Nose switch fault (Flashing Yellow) Exit PE misaligned	Replace Tape Remove jam Press blue reset button and restart machine

(*continued on next page*)

12.9 Trouble Shooting Guide (*continued*)

Problem	Cause	Correction
Tape Incorrectly Cutting	Tape tension too high or too low Tension Roller Binding Blades dull-loose/dry pad/damaged	Adjust Tape Head Tension Loosen or Lubricate Tension Roller Tighten Blade Screws/oil pad/replace blade
Tape Leg too long Tape Leg too long	Cutting Problems (see above) Arm Retract Photo Eye Sensor incorrectly set Arm Retract Photo Eye Sensor incorrectly set Cut-Off Bracket incorrectly releasing/ Timing off	(see above) Re-position Arm Retract Photo Eye Sensor (see above) Re-position Arm Retract Photo Eye Sensor Re-position Bed Senso Check Bracket for Binding
Boxes Damaged	Centering Arms not closing Centering Arms closing and not re-opening Centering Arms moving too slowly	Reduce Control Regulator Pressure Check Air Supply/adjust Check Photo Eye Function Check and Adjiust Air Supply / Flow Control

13. Maintenance and Repairs

13.1 Safety Measures (see section 3)

Carrying out maintenance and repairs may imply the necessity to work in dangerous situations.

13.2 Tools and Spare Parts Supplied with the Machine

See Spare Parts Order Section.

13.3 Recommended Frequency of Inspection and Maintenance Operations (Refer to the end of this section for additional detail)

Operation	Frequency	Qualification	Sections
Inspection safety features	daily	1	13.4
Cleaning of machine	weekly	1	13.5
Cleaning of cutter blade	weekly	2	13.6
Oiling of felt pad	weekly	2	13.7
Lubrication	monthly	2	13.7
Lubrication - Column Bearings	6 months	2	N/A
Blade replacement	when worn	2	See Manual 2

13.4 Inspections to be Performed Before and after every Maintenance Operation

Before every maintenance operation, Turn OFF (O) pneumatics and unplug machine power cord. During maintenance operations, only properly trained and qualified personnel must work on the machine. After every maintenance operation, check the safety devices.

Warning

- To reduce the risk associated with mechanical and electrical hazards:
- Read, understand, and follow all safety and operating instructions before operating or servicing the case sealer.
- Allow only properly trained and qualified personnel to operate and service this equipment.
- To reduce the risk associated with pinches, entanglement and hazardous voltage:
- Turn pneumatic and electrical supply off and disconnect before performing any adjustments, maintenance or servicing the machine or taping heads.

13.5 Check Efficiency of Safety Features

1. Blade guard assembly upper taping head
2. Blade guard assembly lower taping head
3. Latching Emergency stop button with mechanical lock (interrupt supply of electrical power)
4. Safety guards top drive belts

13.6 Cleaning of Machine

Qualification 1

A weekly cleaning with dry rags or diluted detergents is necessary. Cardboard boxes produce a significant quantity of dust and paper chips when processed or handled in case sealing equipment. If this dust is allowed to build up on machine components, it can cause component wear and over-heating of drive motors. The dust build up is best removed from the machine with a vacuum cleaner. Depending on the number of cartons processed, this cleaning should be done weekly. Excessive build-up that cannot be removed by vacuuming should be removed with a damp cloth.

13.7 Cleaning of Cutter Blade

Qualification 2

Should tape adhesive build-up occur, carefully wipe clean with oily cloth or brush. Oil prevents the build-up of tape adhesive

13.8 Recommended Lubrication

AFB-LF

13.9 Tape Application Monitor (Optional)

The Tape application monitor requires little maintenance. Sensors should be checked to ensure they are tight and free from dust. The sensor wheel on the taping head should also be checked to ensure it is clean and rotates with the one way tension roller.

13. Maintenance and Repairs (Cont.)

13.4 Inspections to be Performed Before and after every Maintenance Operation

Before every maintenance operation, Turn OFF (O) pneumatics and unplug machine power cord. During maintenance operations, only properly trained and qualified personnel must work on the machine. After every maintenance operation, check the safety devices.

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AFB-LF

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The Tape application monitor requires little maintenance. Sensors should be checked to ensure they are tight and free from dust. The sensor wheel on the taping head should also be checked to ensure it is clean and rotates with the one way tension roller.

13.10 Box Drive Belt Replacement

Note – **3M** recommends replacement of drive belts in pairs, especially if belts are unevenly worn.

Lower Drive Belts - Figure 13-1

1. Remove and retain center plate **(A)** and four (4) screws.
2. Remove and retain side cover **(B)** and fasteners.
3. Loosen, but do not remove lock nut **(C)**.
4. Loosen tension screw **(D)** until all belt tension is removed.
5. Pull belt splicing pin **(E)** out and remove belt.
6. Place new belt over pulleys with laced splice at top. Insert splicing pin.

Note – Pin must not extend beyond edge of belt.

7. Adjust belt tension as explained in “Adjustments – Box Drive Belt Tension”.
8. Replace side cover and center plates and secure with original fasteners.

Upper Drive Belts - Figure 13-2

1. Remove and retain center plate **(A)** and four (4) screws and plain washers.
2. Loosen, but do not remove lock nut **(B)**.
3. Loosen tension screw **(C)** until all tension is removed from belt.
4. Remove four (4) screws on side of belt guard **(D)** and slide belt guard out to expose belt.
5. Pull belt splicing pin **(E)** out and remove belt.
6. Place new belt over pulleys with laced splice at top. Insert splicing pin.

Note – Pin must not extend beyond edge of belt.

7. Adjust belt tension as explained in “Adjustments – Box Drive Belt Tension”.
8. Replace front cover and belt

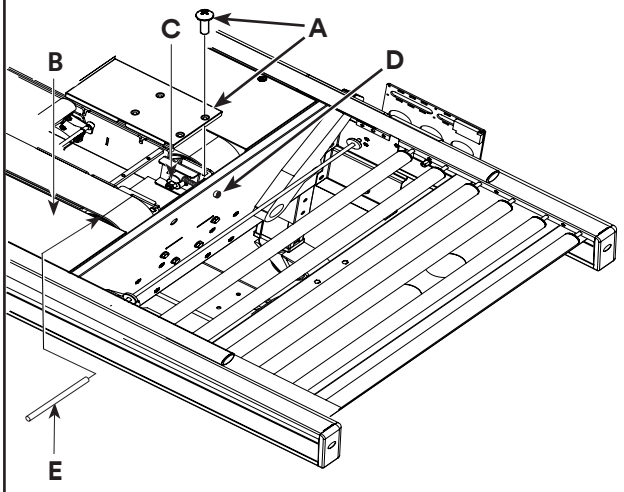


Figure 13-1 Lower Drive Belt Replacement

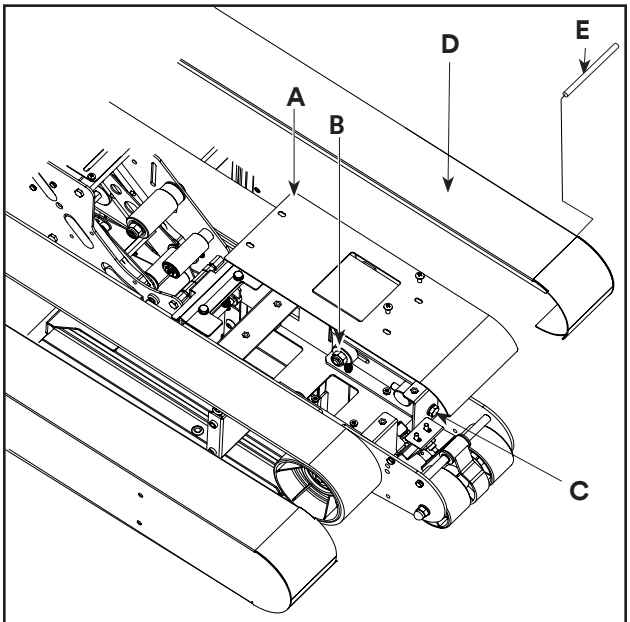


Figure 13-2 Upper Drive Belt Replacement

⚠ Warning

- **To reduce the risk associated with pinches, entanglement and hazardous voltage:**

- Turn pneumatic and electrical supply off and disconnect before performing any adjustments, maintenance or servicing the machine or taping heads.

13. Maintenance and Repairs *(continued)*

13.11 Box Drive Pulley Rings

Before installing a new belt, check the orange plastic drive pulley rings for wear. If torn, broken, or worn smooth, replace the rings **(Figure 13-3).**

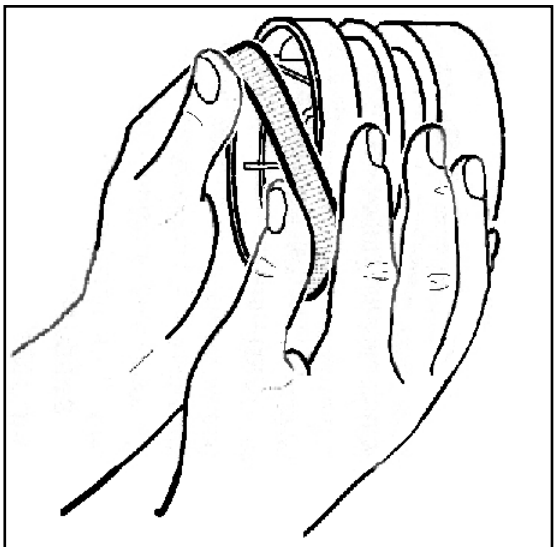


Figure 13-3

13.12 Box Drive Belt Tension

The four (4) continuously moving drive belts convey boxes through the tape applying mechanism. The box drive belts are powered by an electric gear motor.

Tension adjustment of these belts may be required during normal operation (for Belt Tension Adjustment - refer to **Box Drive Belt Replacement**). Belt tension must be adequate to positively move the box through the machine and the belts should run fully on the surface of the pulleys at each end of the frame. The idler pulleys on the infeed end are adjusted in or out to provide proper belt tension. Each belt is adjusted separately. Belt tension is obtained by tightening the adjustment screw so that a moderate pulling force of 3.5kg [7lbs.] applied at the mid span, as shown in **Figure 13-4,** will deflect the belt 25mm [1 inch]. This will assure positive contact between the belt and the drive pulley on the discharge end of the drive assembly.

⚠ Warning

- **To reduce the risk associated with pinches, entanglement and hazardous voltage:**
- Turn pneumatic and electrical supply off and disconnect before performing any adjustments, maintenance or servicing the machine or taping heads.

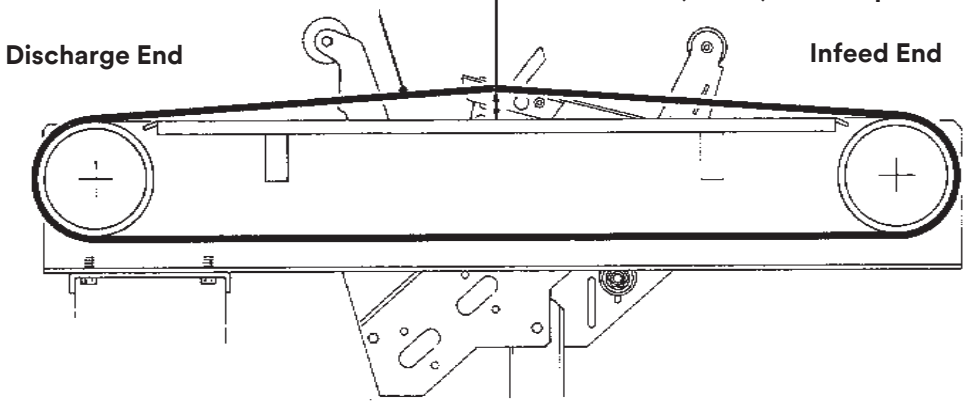


Figure 13-4 Box Drive Belt Tension Adjustment

Refer to **Figure 13-5 and 13-6** and adjust belt tension as follows:

1. Remove and retain center plates/ front cover and four (4) screws.
2. Loosen, but do not remove, the lock nut with an open end wrench.
3. Reset the tension on the drive belts as needed. Adjust the tension screws in (clockwise) to **increase** tension or out (counterclockwise) to **decrease** tension. Tighten lock nut to secure tension setting.
4. Replace center plates/front cover and secure with original screws.

Warning

- **To reduce the risk associated with pinches, entanglement and hazardous voltage:**
- Turn pneumatic and electrical supply off and disconnect before performing any adjustments, maintenance or servicing the machine or taping heads.

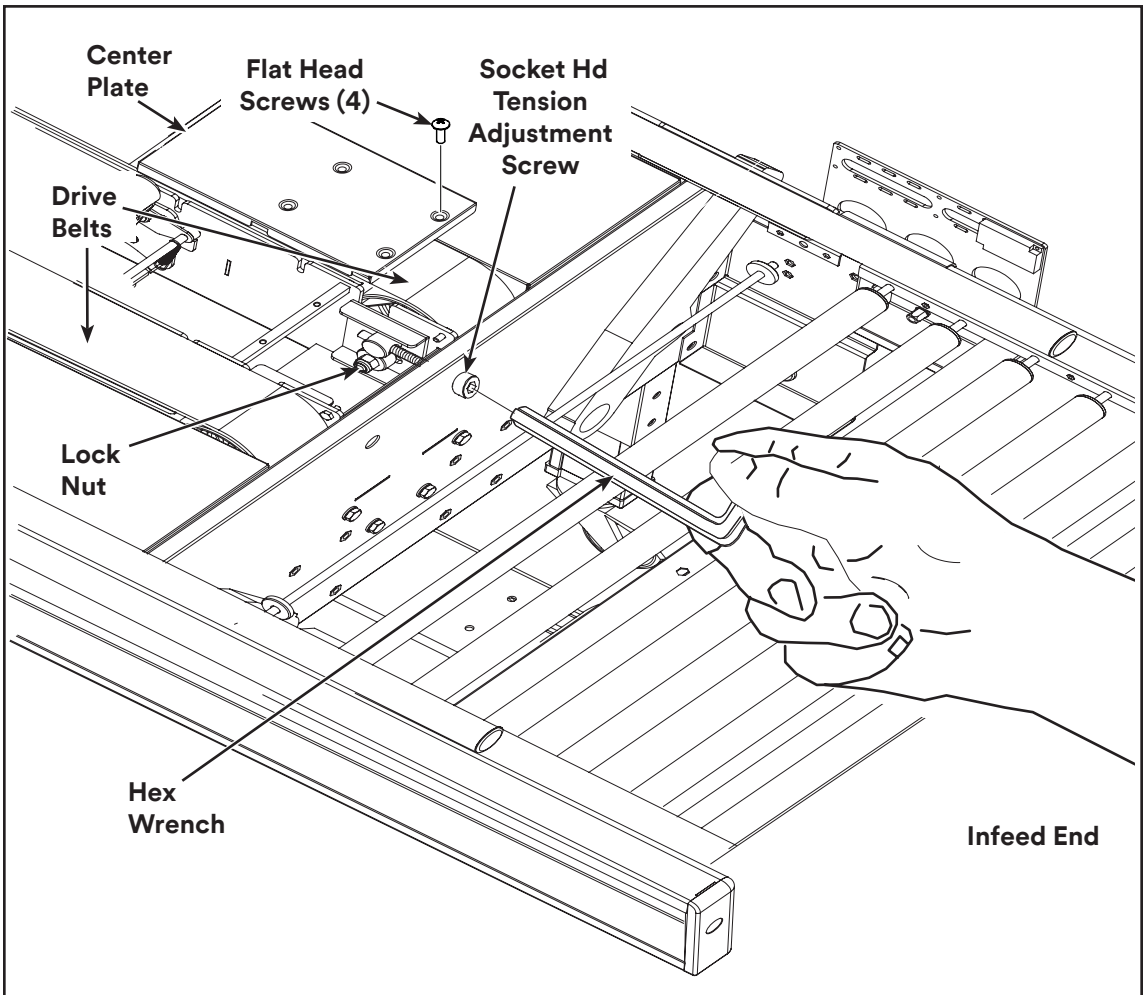


Figure 13-5 Box Drive Belt Tension Adjustment, Lower Belts (Infeed End)

Taping Head Adjustments –

Refer to Manual 2

Tape Web Alignment	– Manual 2
Tape Drum Friction Brake	– Manual 2
Applying Mechanism Spring	– Manual 2
One-Way Tension Roller	– Manual 2
Tape Leg Length Adjustment	– Manual 2
Extended Plate Bumper	– Manual 2

Warning

- **To reduce the risk associated with mechanical and electrical hazards:**
- Turn pneumatic and electrical supplies off and disconnect before performing any adjustments, maintenance or servicing the machine or taping heads.

Warning

- **To reduce the risk associated with sharp blade hazards:**
- Keep hands and fingers away from tape cutoff blades under orange blade guards. The blades are extremely sharp.

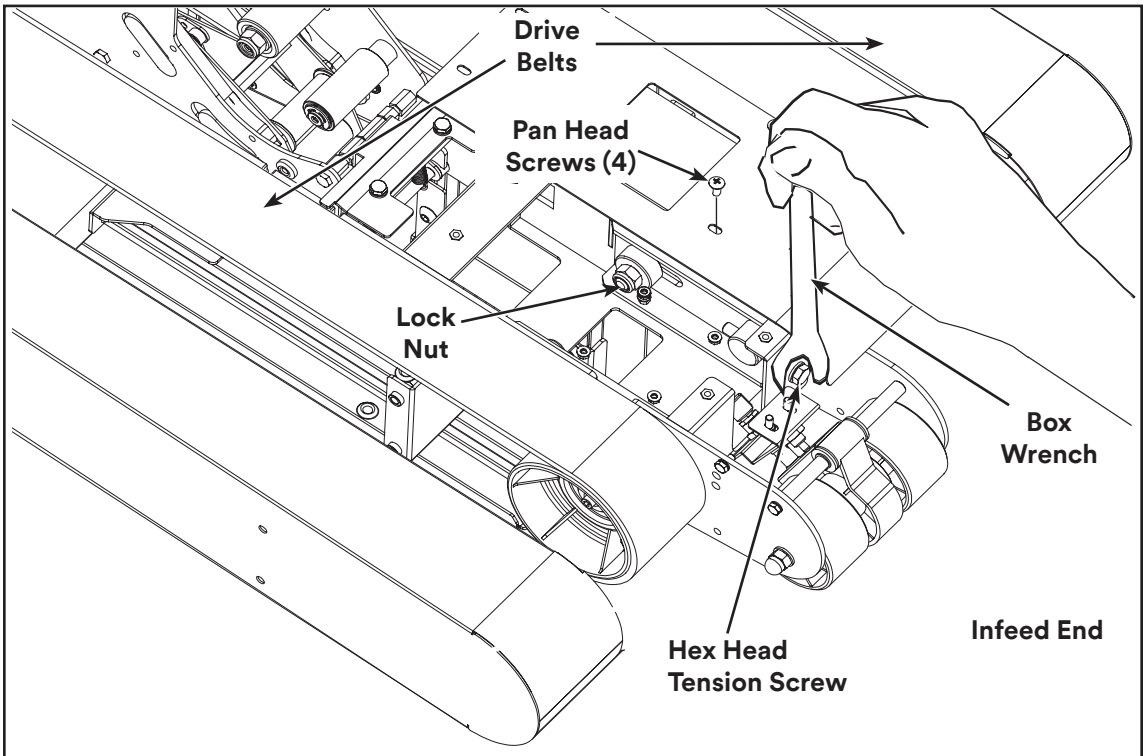


Figure 13-6 Box Drive Belt Tension Adjustment, Upper Belts (Infeed End)

13. Maintenance and Repairs *(continued)*

Inspection	Frequency	Skill Level	Lubricant
Safety Features	**Daily**	**2**	
1 Mechanical guarding (All) in place, not damaged			NA
2 E-stop properly working, not damaged.			NA
3 Mechanical safety latches Upper assembly - working, not damaged			NA
4 Power cords (All).			NA
5 Safety labels Visible, not damaged			NA
6 Main pneumatic exhaust valve, properly working, not damaged.			NA
Taping Head (*)	**Weekly**	**2**	
1Tension Roller, Proper setting, Binding			NA
2Tape Drum tension setting, Binding			NA
3 Cutter Blade, Clean (replace if worn)			NA
4 Felt Pad, Lubrication			Food Safe Grease
5 Wipers, (replace when worn)			NA
6 Spring Post(s) Cutoff bracket Spring, Lubrication			General Purpose Grease
7 Spring Post(s) Main mechanism Spring, Lubrication			General Purpose Grease
8 Rollers, Damage, Binding (replace when worn)			NA
9 Bumpers, Damage (replace when worn)			NA
General Machine	**Weekly**	**2**	
1Tape heads Proper threading, Proper installation			NA
Main spring with red stripe in lower position			NA
Main spring with no marking in upper position			NA
Upper head latch engaged			NA
2 Sensors and reflectors on the bed frame, properly functioning, not damaged			NA
TAM (if applicable) “tape dispensing” sensor beam centered on the reflective lobe of the disk, no damaged or missing reflective segments.			
3 Pneumatic regulators at recommended settings (main, box centering, upper assembly counter-balance)			NA
4 Box centering move freely through the set range (7.0” to preset Max.width)			NA
5 Drive Belts (Replace if worn or damaged)		NA	
6 Upper assembly actuator switch, proper functio, not damaged (replace if worn)			NA
operational test, depress head raise actuator switch, check for Smooth motion and expected rate when traveling up and down.			
7 Pushbuttons, Proper function, undamaged (Start/Stop, Reset)			NA
8 Run test, re-start machine, listen for unusual sounds (i.e. noisy drive system(s), air leaks, etc..)			
9 Box seal test, machine running, taping head(s) installed with tape, seal both an empty small box and a larger heavier box, inspect seal.			
Cleaning – Machine (**)	**Weekly**	**2**	
1 Upper Assembly			NA
2 Lower bed (i.e. bed covers, belts)			NA
3 Sensors			NA
4 Interior Base Frame			NA
Other			
1 Drive Sprockets and Chains (Lower/Upper) Lubricate	200 Hours	2	General Purpose Grease
2 Box Centering Sprocket and Chains Lubricate	600 Hours	2	General Purpose Grease
3 Column Bearings/Rails	6 months	2	NA
4 Orange Belt Friction Rings (Inspect when replacing Drive belts)	When Worn	2	NA

*** For high usage applications it’s recommended to replace complete new/rebuilds taping heads into the machine**
****Use vacuum to remove corrugate dust (Do not use compressed air for cleaning)**

13. Maintenance and Repairs *(continued)*

13.13 List of the Maintenance Operations

Date: **Description of Operation**

14. Additional Instructions

14.1 Information for Disposal of Machine (ELV)

The machine is composed of the following materials:

- Steel structure
- Nylon rollers
- Drive belts in PVC
- Nylon pulleys

For machine disposal, follow the regulations published in each country.

14.2 Emergency Procedures

In case of danger/fire: Disconnect plug of power cable from power supply **(Figure 14-1).**

IN CASE OF FIRE

Use a fire extinguisher that is rated for electrical fires **(Figure 14-2).**

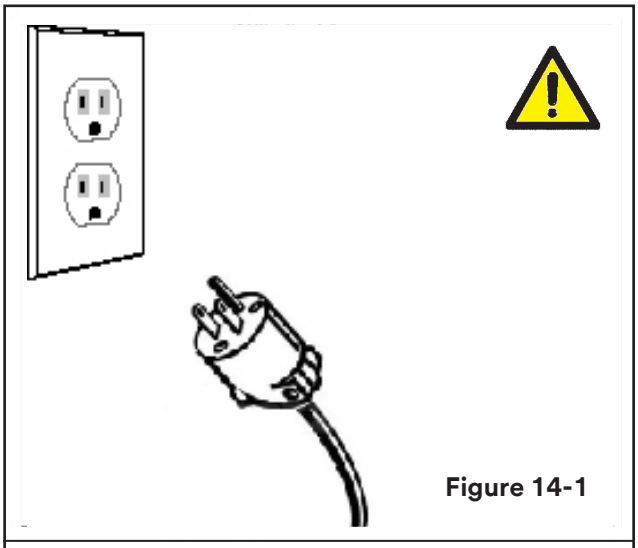


Figure 14-1

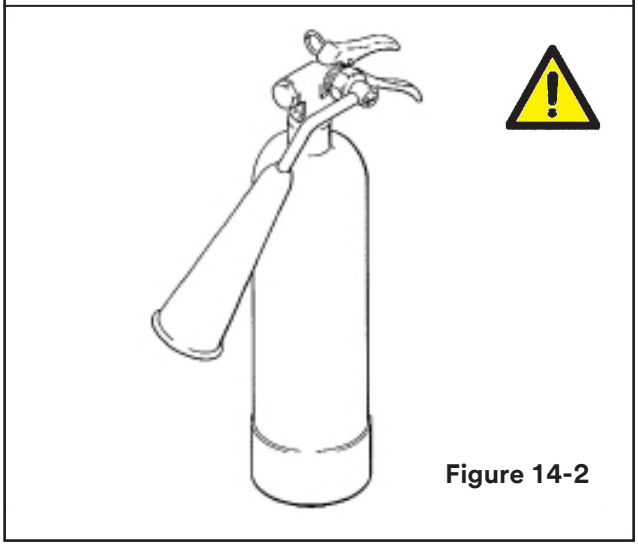


Figure 14-2

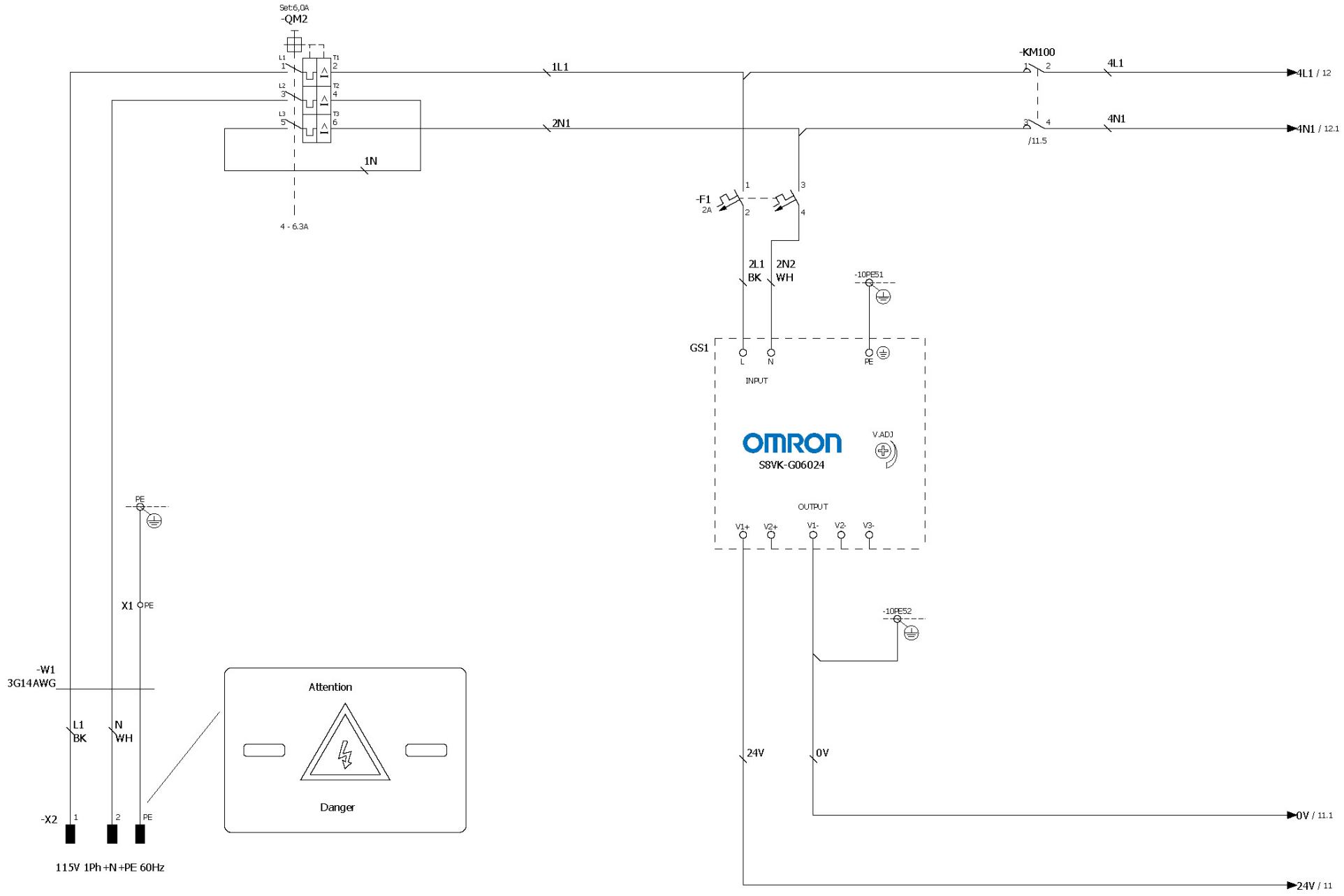
15. Additional Information

15.1 Statement of Conformity

N/A

15.2 Emission of Hazardous Substances

Nothing to report



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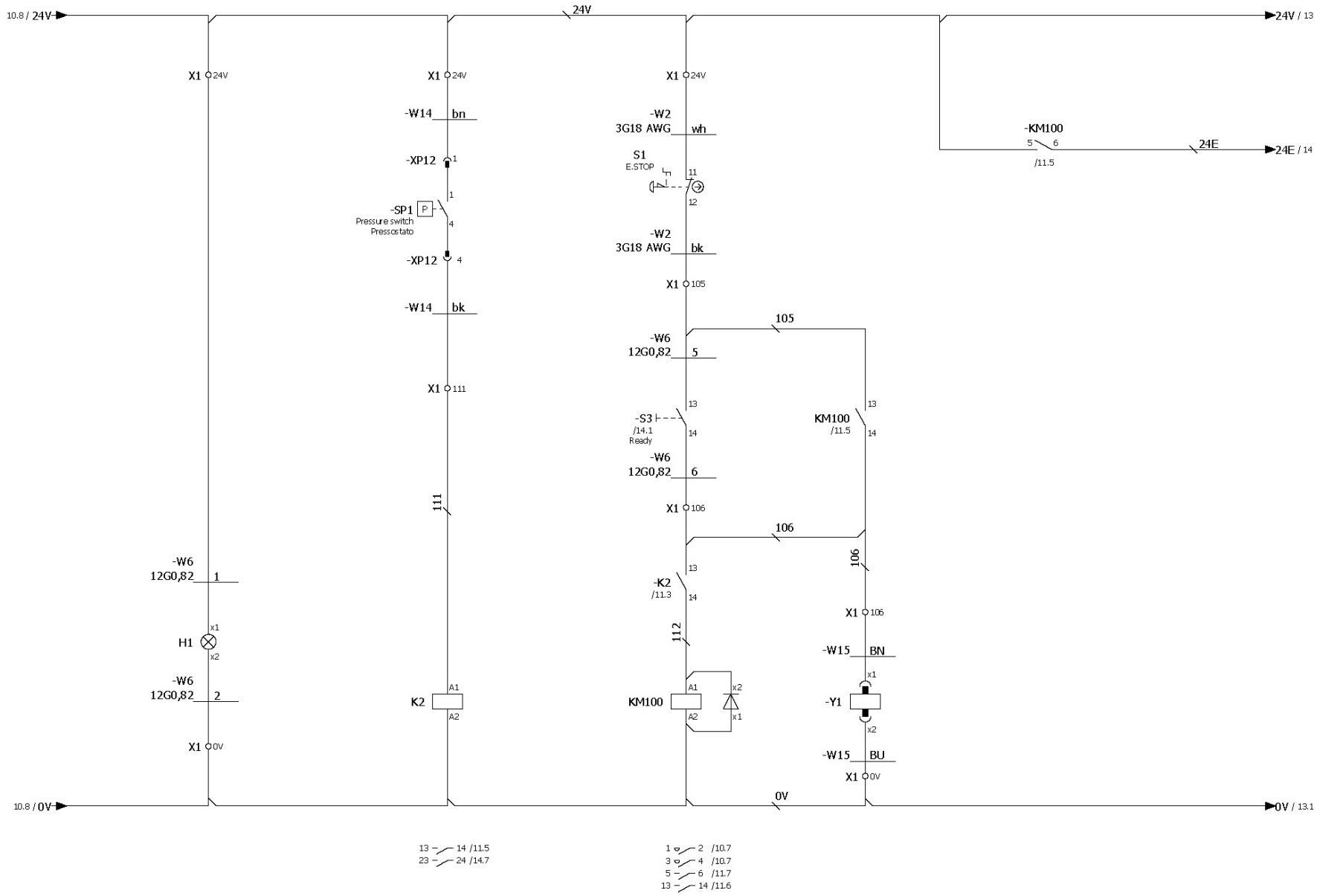
11

			Date Change	18/01/2022	EPLAN		Power supply	SBB0006215	= 00
User.									+ P
Date	15/12/2021		Date	18/01/2022	7000r-HS_TAM			EPLAN sample project	Pg. 10
Check.		Name	Norm		Revision 2.1	Created for			18 Pgs



10 12

			Date Change	18/01/2022	EPLAN		Emergency stop	SBB0006215	= 00
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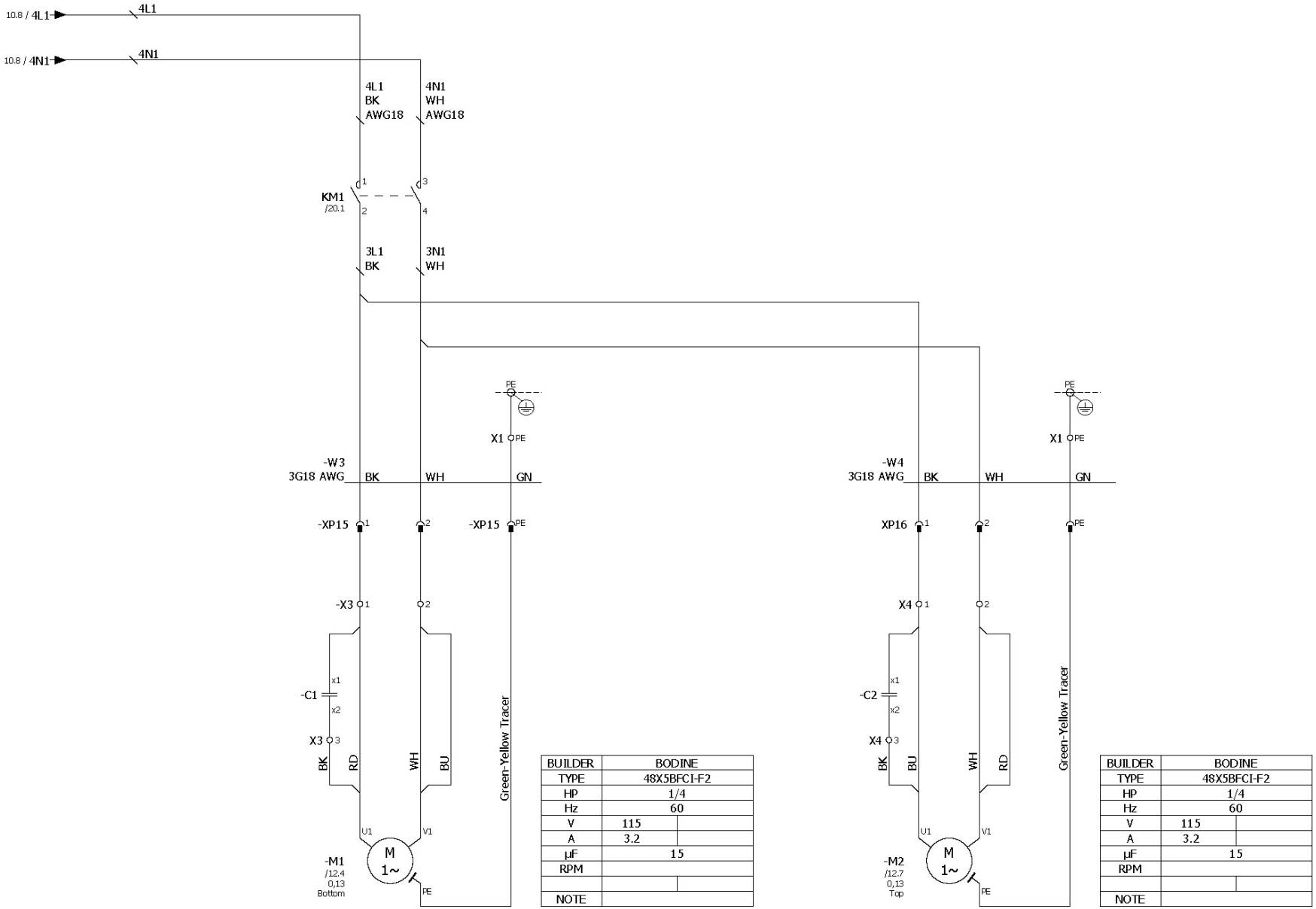
Check.		Name	Norm		Revision 2.1	Created for			18 Pgs



BUILDER	BODINE
TYPE	48X5BFCI-F2
HP	1/4
Hz	60
V	115
A	3.2
µF	15
RPM	
NOTE	

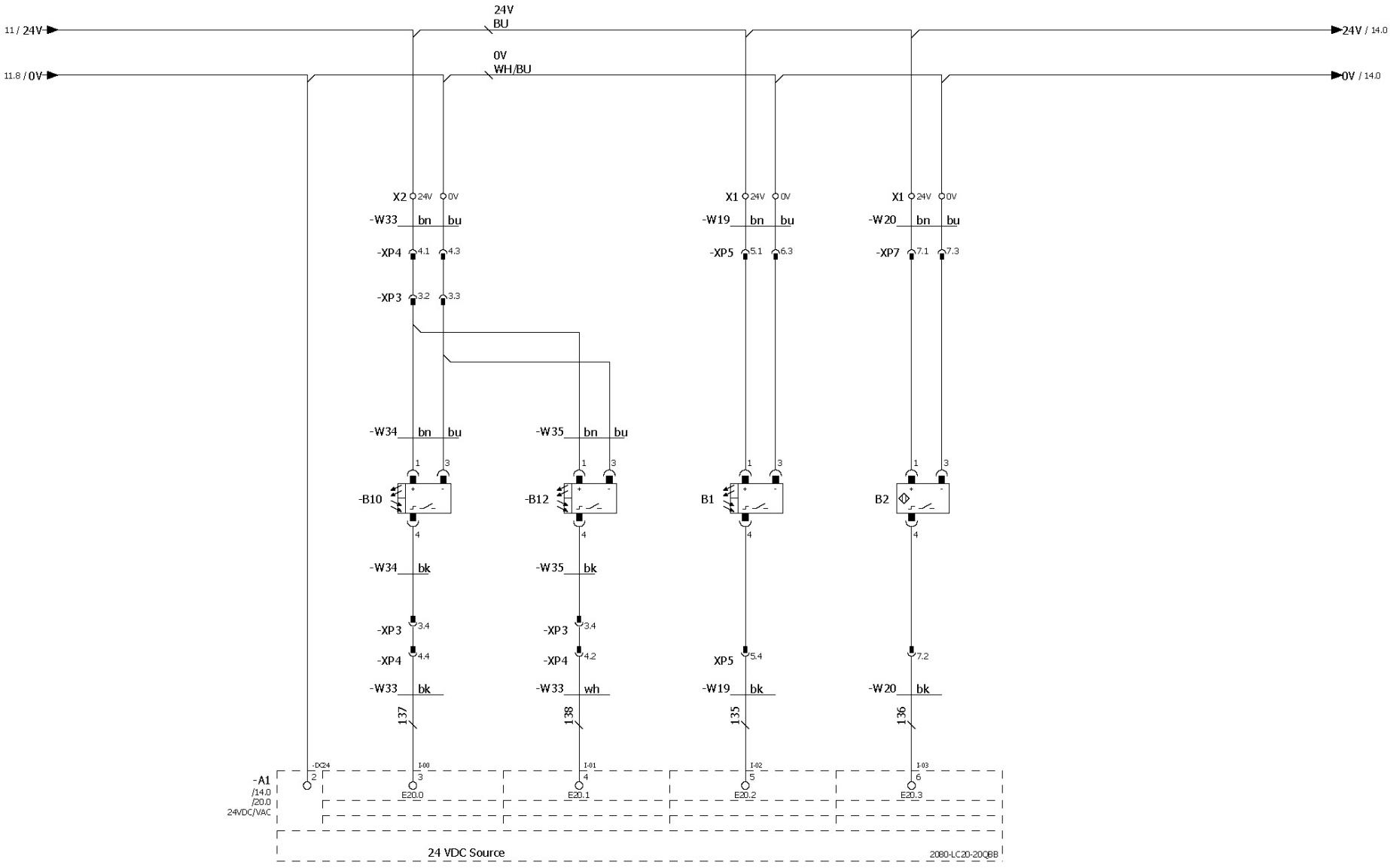
BUILDER	BODINE
TYPE	48X5BFCI-F2
HP	1/4
Hz	60
V	115
A	3.2
µF	15
RPM	
NOTE	

11

13

			Date change	18/01/2022	EPLAN	Motors	SBB0006215
User.					7000r-HS_TAM		EPLAN sample project
Date	15/12/2021		Date	18/01/2022			
Check.		Name	Norm		Revision 2.1	Created for	

= 00
+ P
Pg. 12
18 Pgs



12 14

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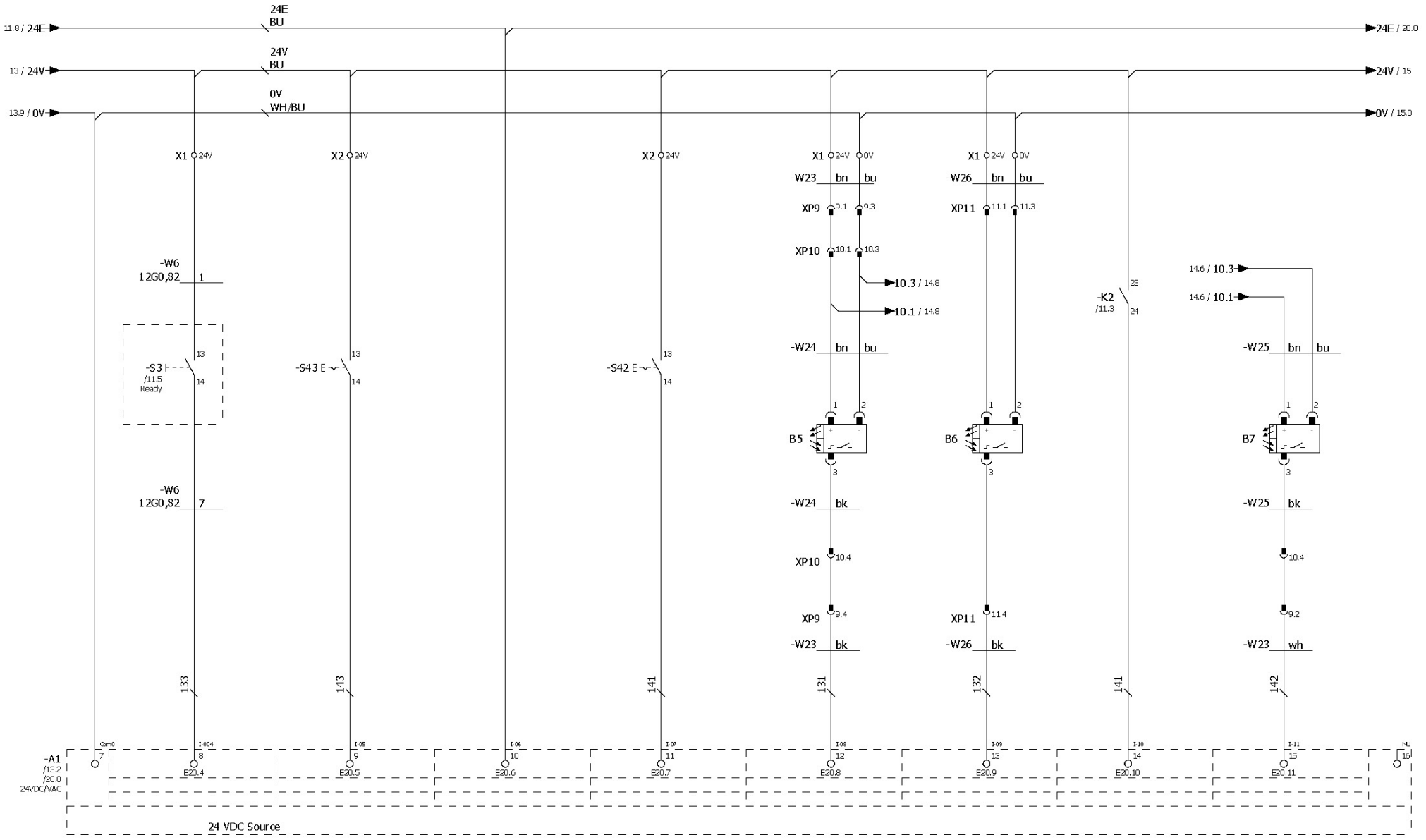
User.									+ P
Date	15/12/2021		Date	18/01/2022	7000r-HS_TAM			EPLAN sample project	Pg. 13
Check.		Name	Norm		Revision 2.1	Created for			18 Pgs



13 15

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Date	15/12/2021		Date	18/01/2022	7000r-HS_TAM			EPLAN sample project	Pg. 14
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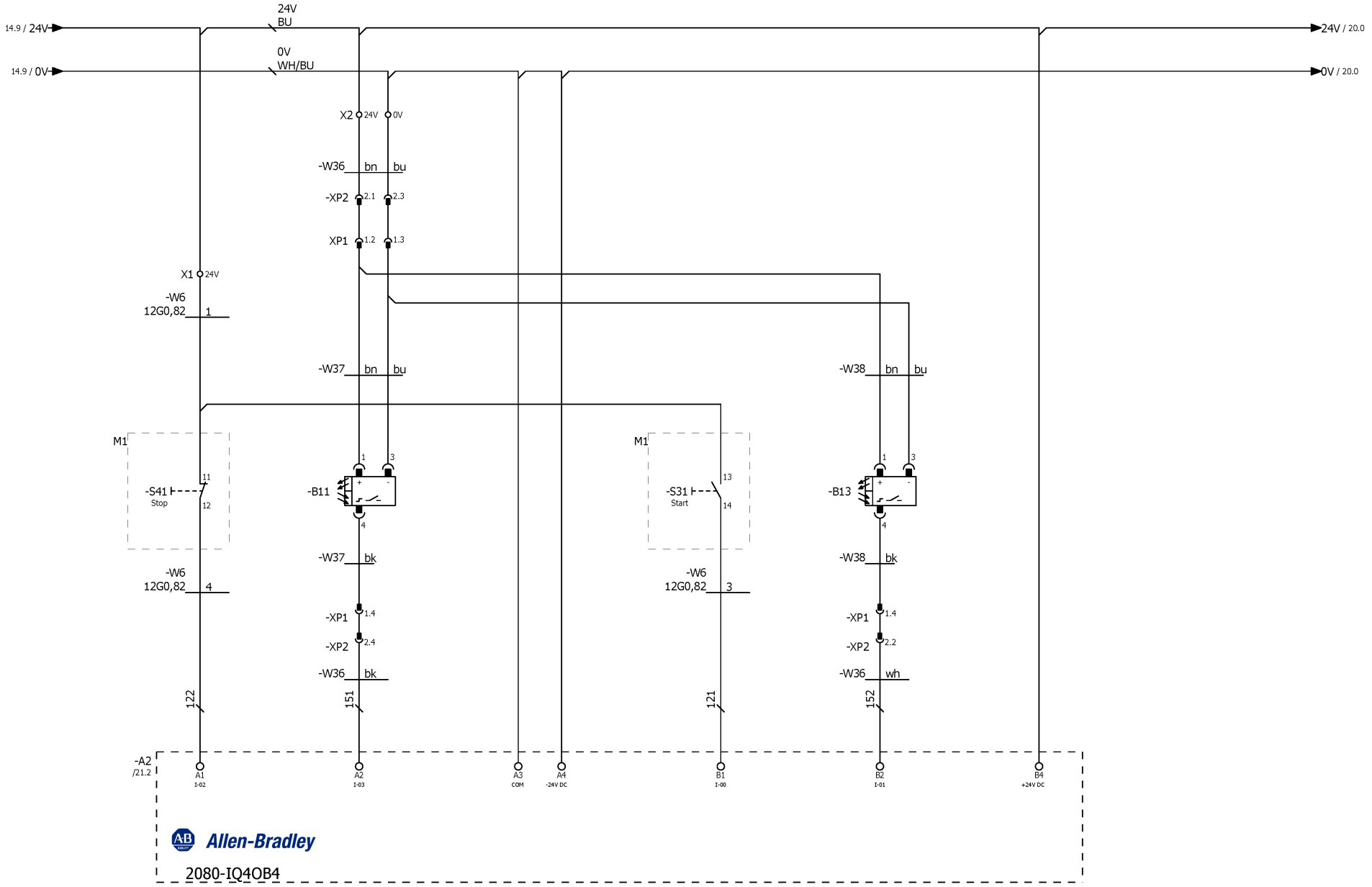

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20

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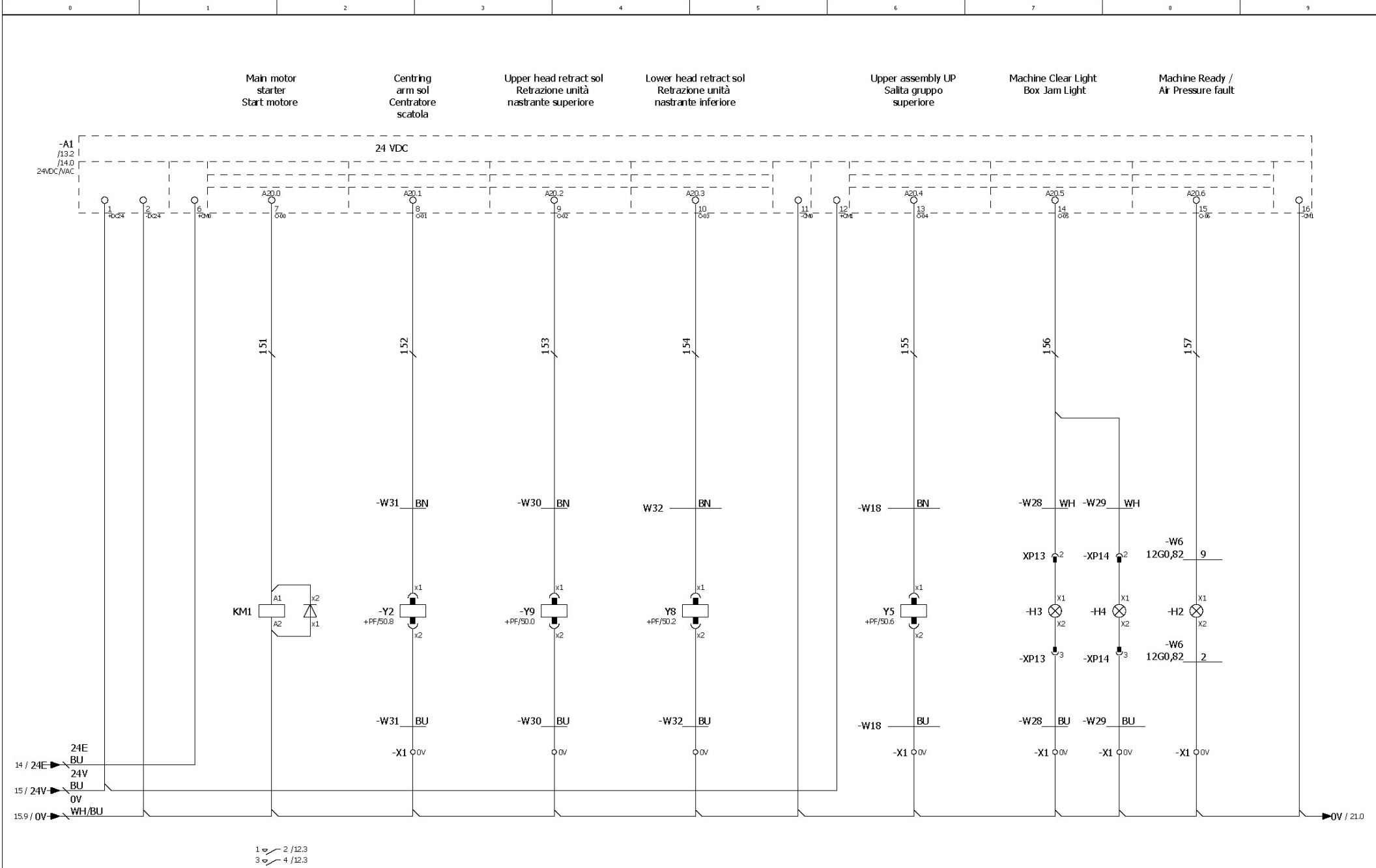
Check.		Name	Norm		Revision 2.1	Created for			18 Pgs



15 21

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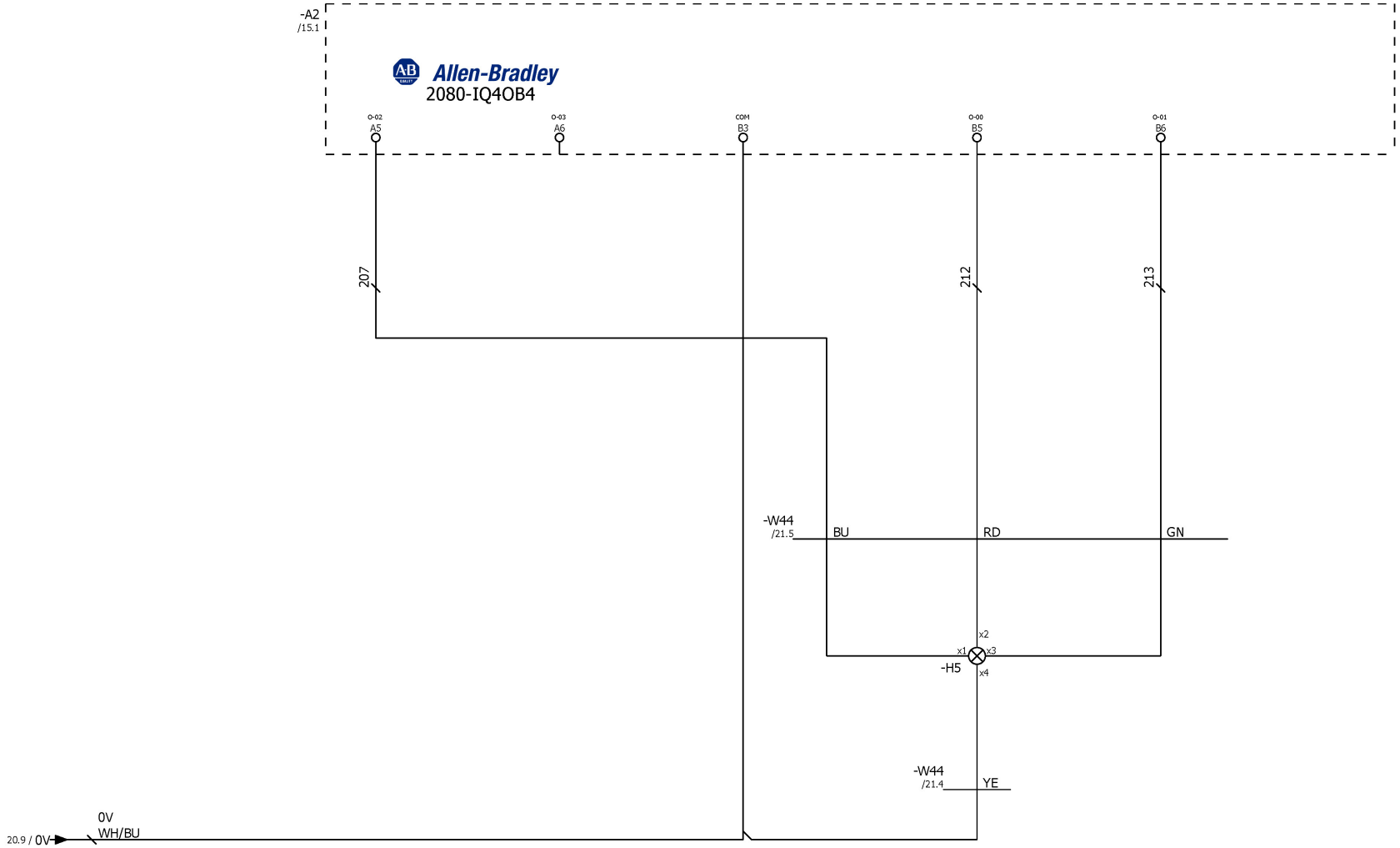
User.									+ P
Date	15/12/2021		Date	18/01/2022	7000r-HS_TAM			EPLAN sample project	Pg. 20
Check.		Name	Norm		Revision 2.1	Created for			18 Pgs

TAM Light
Spia TAM

Spare
Riserva

TAM Light
Spia TAM

TAM Light
Spia TAM



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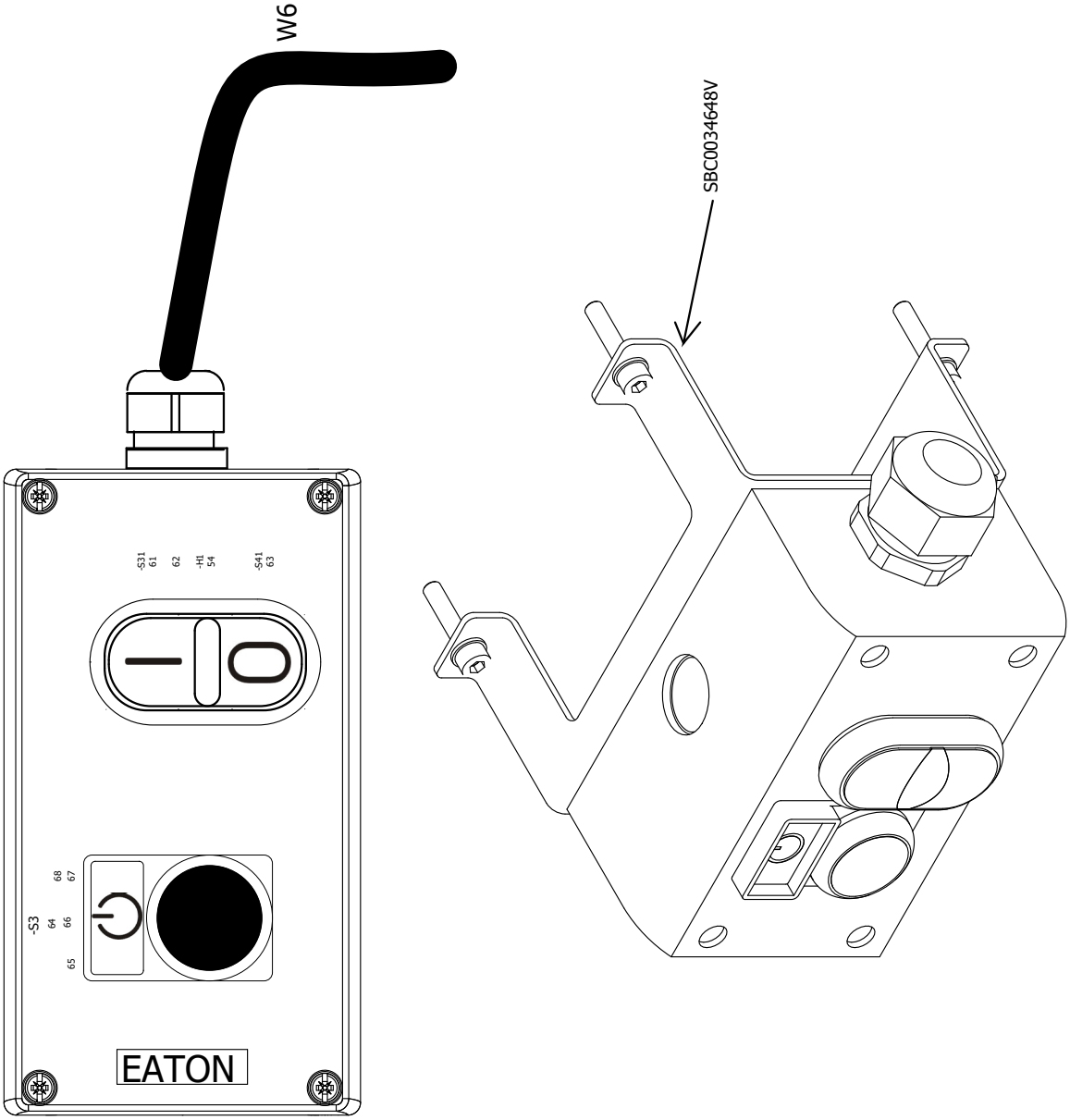
User.									+ P
Date	15/12/2021		Date	18/01/2022	7000r-HS_TAM			EPLAN sample project	Pg. 21
Check.		Name	Norm		Revision 2.1	Created for			18 Pgs

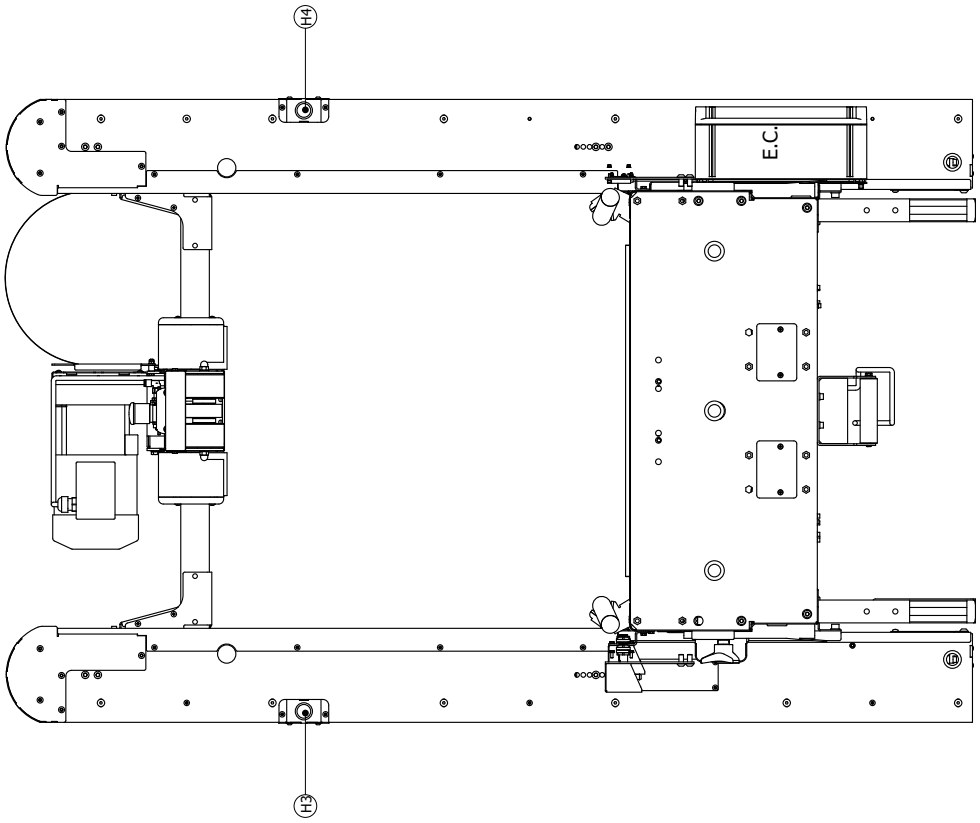
16.1 Technical Diagrams - Electric *(continued)*

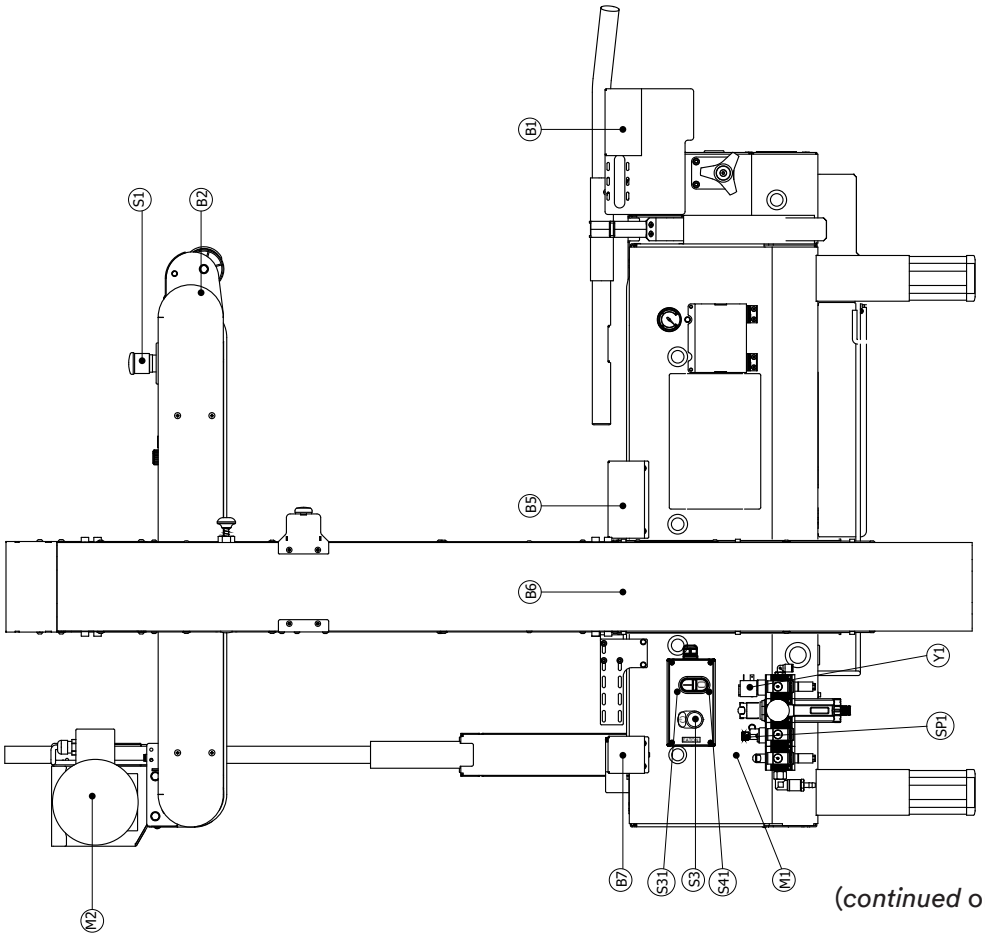


(*continued* on next page)

16. Technical Documentation and Information *(continued)*

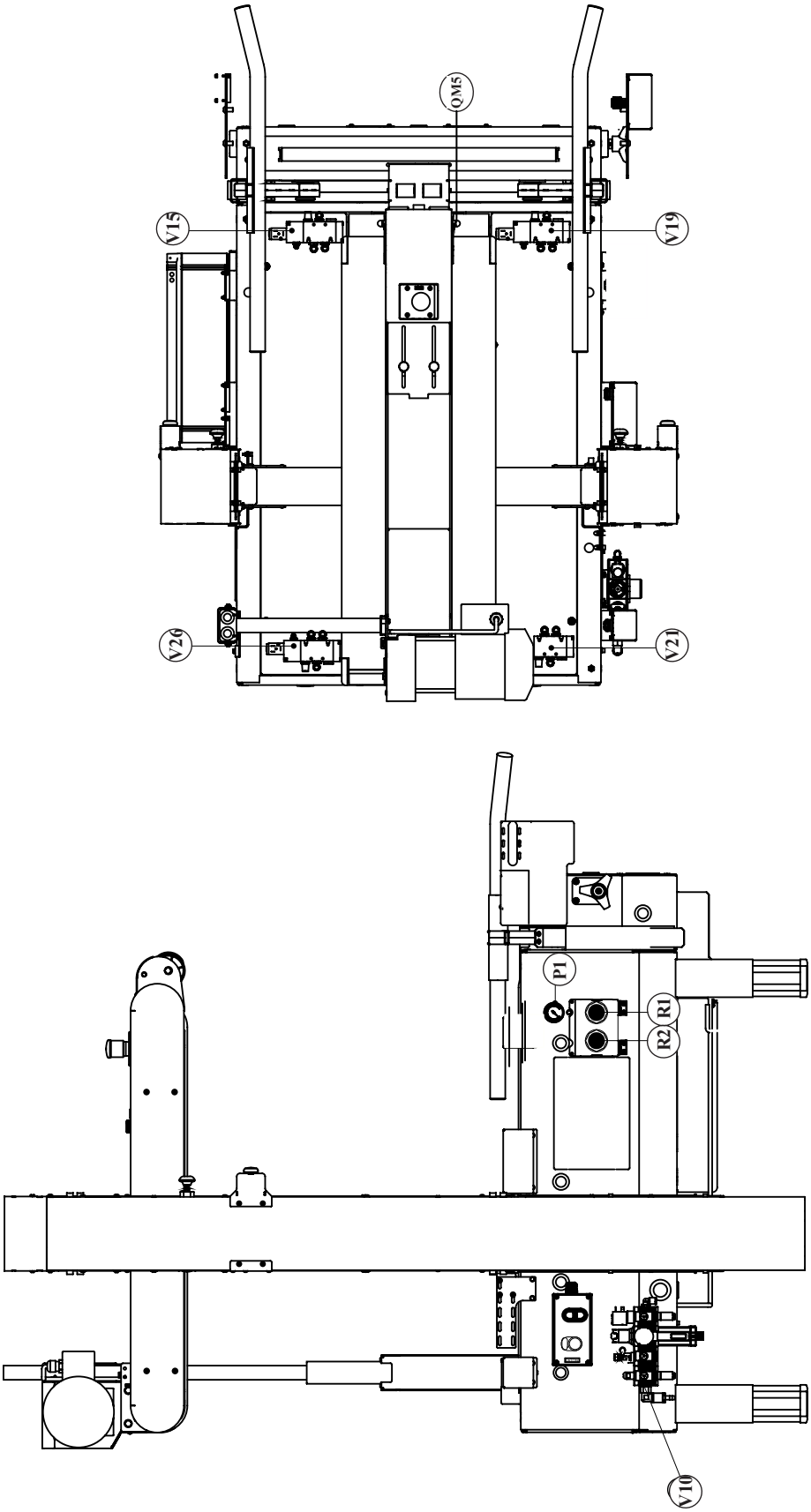
16.1 Technical Diagrams - Electric *(continued)*





(*continued* on next page)

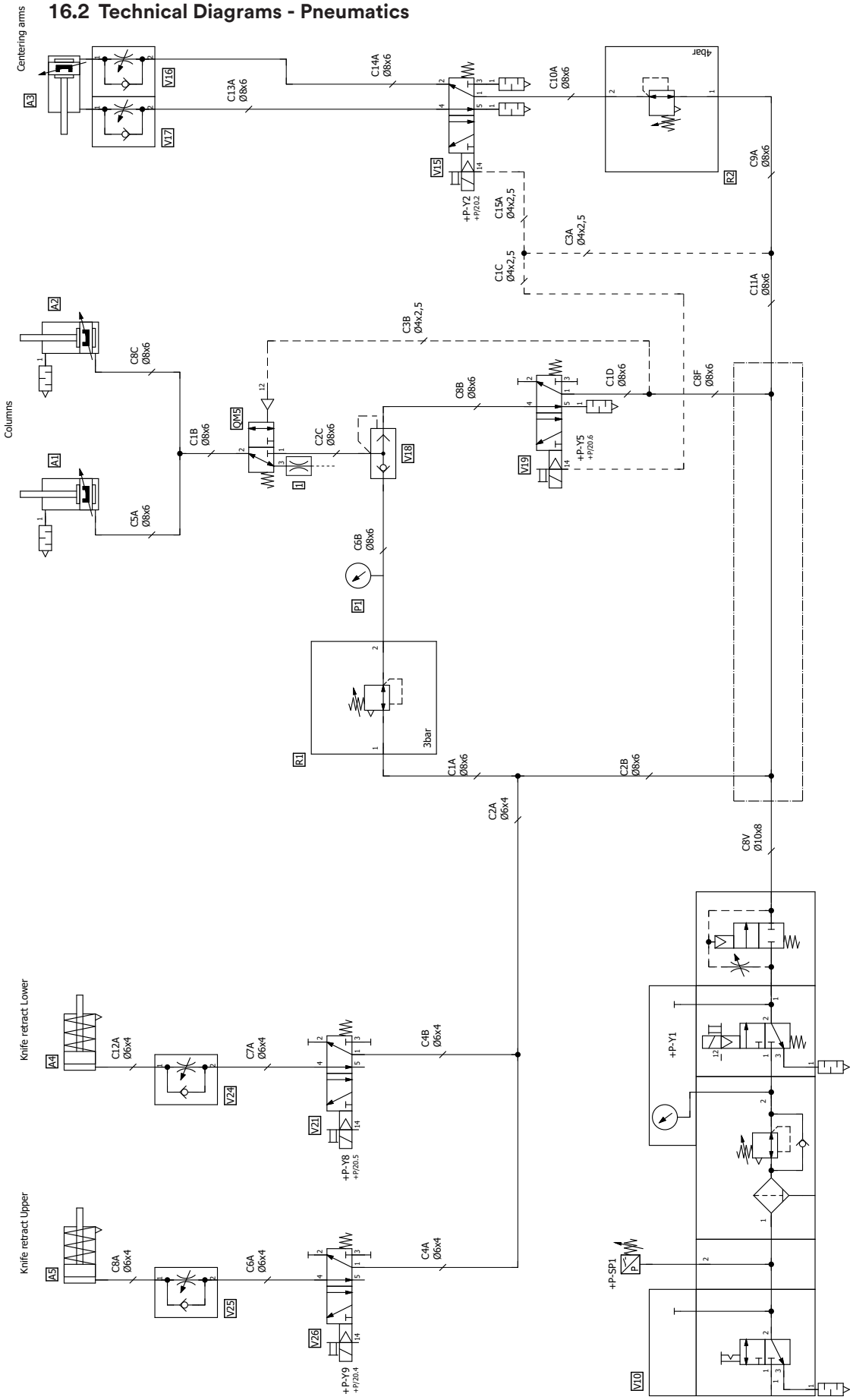
16.1 Technical Diagrams - Electric *(continued)*



(Pneumatics on next page)

16. Technical Documentation and Information *(continued)*

16.2 Technical Diagrams - Pneumatics



16.3 Spare Parts Order

Replacement Parts Ordering Information and Service

Refer to the first page of this instruction manual “Replacement Parts and Service Information”.

Order parts by quoting the following information:

(Refer to the Identification Plate on the Machine)

- Machine Model
- Serial Number
- Figure Number
- Position
- 3M Part Number (11 Digits)
- Description
- Quantity

Refer to **Manual 2** for recommended taping head spare parts.

Important!
The machine is constantly revised and improved by our designers. The spare parts catalogue is also periodically updated. It is very important that all the orders of spare parts make reference to the serial number of the machine (located on the identification plate on the machine).

The manufacturer reserves the right to modify the machine at any time without notice.

Spare Parts:
7000r-7000r3 HS Pro
Random High Speed Case Sealer

It is suggested that the following spare parts be ordered and kept on hand:

7000r-7000r3 HS Pro

Qty.	3M-Part Number	Description
2	78-8137-6303-0	Belt-Drive w/Hook

Spare Parts Kit:

7000r HS - Part Number 78-0025-0236-3
7000r3HS - Part Number 78-0025-0237-1

Label Kit:

In the event that any labels are damaged or destroyed, they must be replaced to ensure operator safety. A label kit, part number 78-0025-0239-7, is available as a stock item. It contains all the safety labels used on the **7000r-7000r3 HS Pro** Random High Speed Case Sealer.

Tool Kit:

A tool kit, part number 78-0025-0238-9, is supplied with the machine as a stock item. The kit contains the necessary open end and hex socket wrenches for use with the metric fasteners on the case sealer.

A threading tool, part number 78-8076-4726-4 contained in above kit is also available as a replacement stock item.

Replacement Parts Ordering Information and Service:

Refer to the first page of this instruction manual “Replacement Parts and Service Information”.

7000r-7000r3 HS Pro Random High Speed Case Sealer, Type 22100 Frame Assemblies

To Order Parts:

1. Refer to first illustration, Frame Assemblies, for the Figure Number that identifies a specific portion of the machine.
2. Refer to the appropriate Figure or Figures to determine the parts required and the parts reference number.
3. The Parts List that follows each illustration, includes the Reference Number, Part Number and Part Description for the parts on that illustration.

Note – The complete description has been included for standard fasteners and some commercially available components. This has been done to allow obtaining these standard parts locally, if desired.

4. Order parts by Part Number, Part Description and Quantity required. Also include the model/machine name, machine type, and serial number that are located on the identification plate.
5. Refer to the first page of this instruction manual **"Replacement Parts and Service Information"** for replacement parts ordering information.

Important – Not all the parts listed are normally stocked items. Some parts or assemblies shown are available only on special order. Contact **3M**/Tape Dispenser Parts to confirm item availability.

Options and Accessories:

For additional information on the options and accessories listed below - contact your 3M Representative.

Part Number	Option / Accessory
70-0064-2998-2	Caster Kit Attachment
70-0067-5966-9	Conveyor Extension Attachment
70-0099-2003-7	Accuglide™ V HSP 3" Control Side w/Blade Retract
70-0099-2009-4	Accuglide™ V HSP 3" Opposite Side w/Blade Retract
70-0075-1426-1	7000r HS Tape Application Monitor (TAM - Factory Installed)

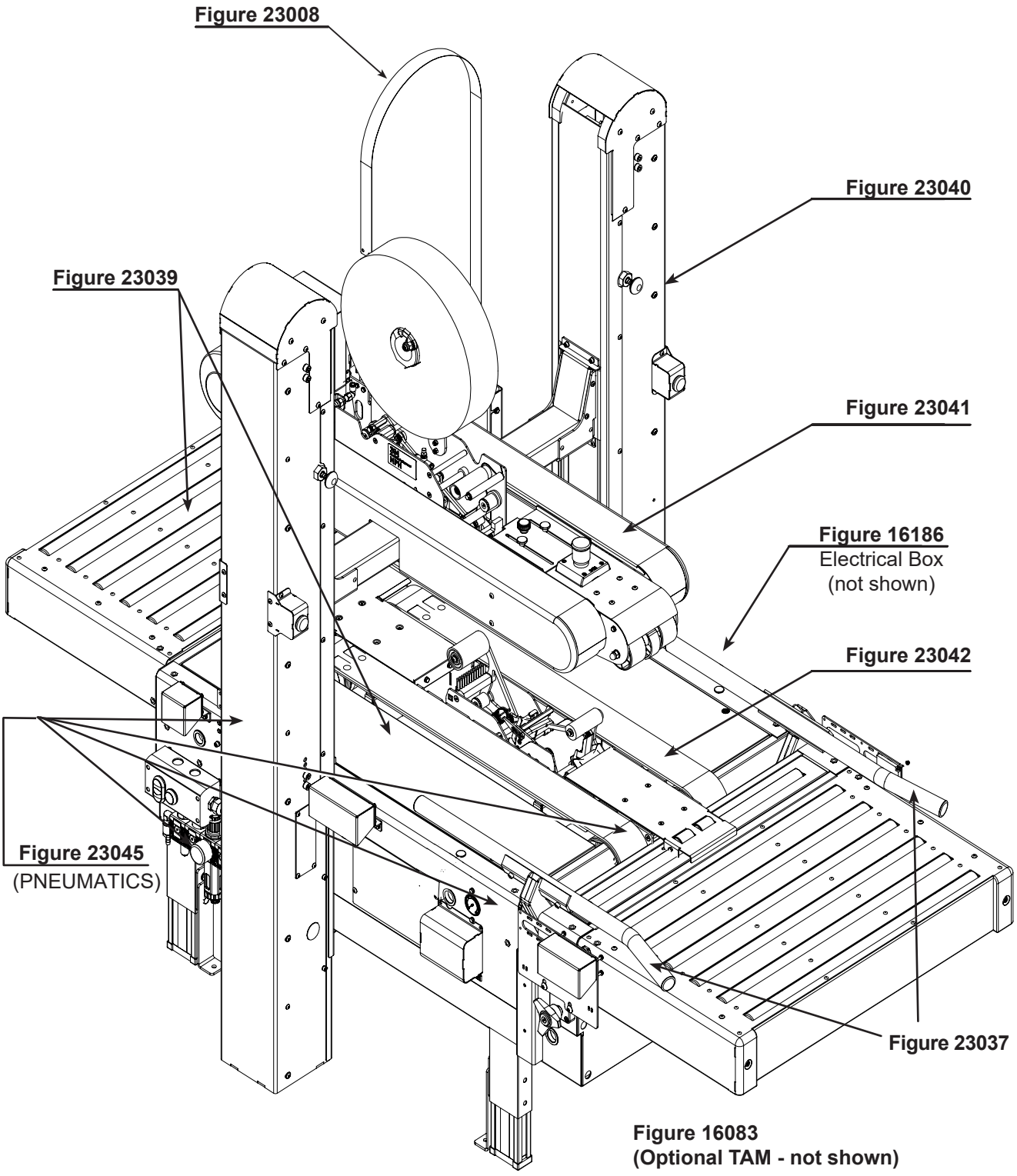


Figure 16083
(Optional TAM - not shown)

Frame Assemblies

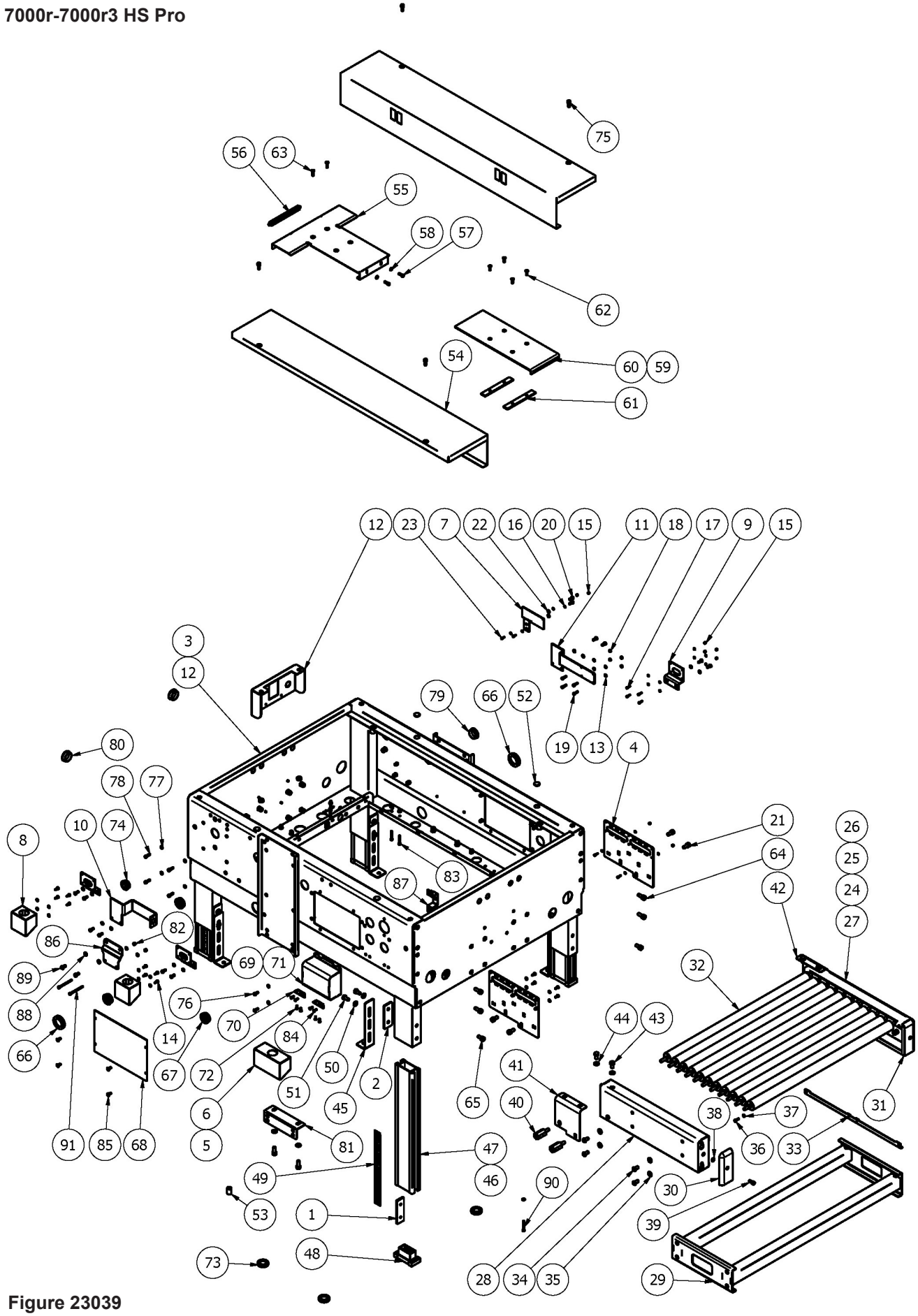


Figure 23039

7000r-7000r3 HS Pro

Bill of Materials			
ITM#	QTY	PART NUMBER	DESCRIPTION
1	4	78-8137-0635-1	CLAMP-LEG
2	4	78-8129-6100-7	BRACKET
3	1	78-0025-0755-2	BED ASSEMBLIES
4	2	78-8137-8455-6	BRACKET-PHOTO EYE/REFLECTOR
5	1	78-8137-7729-5	Cover w/Nutserts
6	1	78-8137-7730-3	Cover - Photo Eye 7000r HS
7	1	78-8137-8243-6	BRACKET-EXIT REFLECTOR
8	2	78-8137-8263-4	Cover - Photo Eye 7000r HS
9	3	78-8137-8241-0	Support - Photocell
10	1	78-0025-0751-1	Brkt - PE Upper Knife Ret 7000r HS
11	1	78-0025-0752-9	BRACKET-MID BED REFLECTOR
12	1	78-8137-8452-3	BED-ASSY
13	16	M4 WSHR	WASHER-M4 PLAIN
14	12	M4X10 HHCS	SCREW-M4X10 HHCS
15	8	M3 HEX-L	NUT-M3 HEX LOCKING
16	16	M3 WSHR	WASHER-M3 PLAIN
17	6	M3X12 SHCS	SCREW-M3X12 SHCS
18	4	M4 HEX NUT	NUT-M4 HEX
19	4	M4X15 SHCS	SCREW-M4X15 SHCS
20	12	M5X12 HHCS	SCREW-M5X12 HHCS
21	4	M8x16 SHCS	SCREW-M8x16 SHCS
22	12	M5 WSHR	WASHER-M5 PLAIN
23	2	78-8137-3716-6	Fstnr - M3x10mm Lg SHCS
24	1	78-0025-0647-1	CONVEYOR KIT
25	1	78-0025-0648-9	CONVEYOR-ASSY W/BRACKETS
26	1	78-0025-0649-7	CONVEYOR-ASSY
27	1	78-0025-0650-5	WELDMENT-CONVEYOR RT
28	1	78-0025-0651-3	WELDMENT-CONVEYOR LT
29	1	78-0025-0652-1	CONVEYOR FRAME ASSY
30	1	78-8076-4512-8	END CAP L/H
31	1	78-8076-4511-0	END CAP R/H
32	11	78-8137-3601-0	Roller Assy.
33	1	78-0025-0653-9	CLIP-ROLLER RETAINING
34	8	M8X16 BHSHCS	SCREW-M8X16 BHSHCS
35	8	M8 WSHR	WASHER-M8 PLAIN
36	2	78-8060-7818-0	SCREW-M4X12 HHCS
37	2	M4 WSHR	WASHER-M4 PLAIN
38	2	M6 WSHR	WASHER-M6 PLAIN
39	2	M6X15 SHCS	SCREW-M6X15 SHCS
40	4	78-0025-0654-7	Spacer - Hex 7000rhs Centering PE brkt
41	1	78-0025-0655-4	BRACKET-CONVEYOR LT
42	1	78-0025-0656-2	BRACKET-CONVEYOR RT
43	8	M8X16 HHSC	SCREW-M8X16 HHCS
44	4	M8 WSHR	WASHER-M8 PLAIN
45	4	78-8137-8163-6	Anchor Brckt palletizing 7000 series
46	4	78-8137-6373-3	LEG-INNER ASSY.
47	1	78-8137-6287-5	LEG-INNER
48	1	78-8137-0641-9	PAD-FOOT
49	1	78-8060-8481-6	LABEL-LEG RULER
50	12	M8 WSHR	WASHER-M8 PLAIN
51	8	M8X16 HHSC	SCREW-M8X16 HHCS
52	4	78-8054-8821-6	Cap - End
53	4	78-8060-8486-5	Bushing
54	2	78-8137-6329-5	Plate - Side Sliding
55	1	78-8137-7986-1	PLATE-REAR SLIDING ASSY (SHORT)
56	1	78-8137-8174-3	Support - Rear Slide (Short) Assy.
57	2	M5X16 HHCS	SCREW-M5X16 HHCS
58	2	M5 WSHR	WASHER-M5 PLAIN
59	1	78-8137-7997-8	INFEED BRACKET
60	1	78-8137-8176-8	PLATE-CENTER INFEED
61	2	78-8137-8175-0	SUPPORT-CENTER INFEED PLATE
62	4	26-1005-5316-8	Screw - Flat Hd Hex Dr, M5 x 16
63	2	M5X20 FHSHCS	SCREW-M5X20 FHSHCS
64	8	M8x20 SHCS	SCREW-M8X20 SHCS
65	2	M8x16 SHCS	SCREW-M8x16 SHCS
66	2	78-8094-6406-4	RUBBER CABLE FOR HOLE / 38

Figure 23039

Bill of Materials			
ITM#	QTY	PART NUMBER	DESCRIPTION
67	3	78-8094-6489-0	GROMMET
68	1	78-0025-0617-4	COVER PLATE
69	1	78-8137-8456-4	GAUGE COVER ASSY W/HINGES
70	2	78-0025-0630-7	HINGE
71	1	78-0025-0831-1	COVER-GAUGE ASSY
72	4	78-8017-9317-1	SCREW-M4X12 FHSHCS
73	3	78-8119-8672-4	GROMMET - EZ-DG21
74	1	78-8076-4702-5	GROMMET-HEYCO SB1093-13
75	4	M6X16 SHCS	SCREW-M6X16 SHCS
76	2	M5X12 HHCS	SCREW-M5X12 HHCS
77	35	M5 WSHR	WASHER-M5 PLAIN
78	4	78-8032-0382-3	Screw - Soc Hex Hd, M5 x 16
79	1	78-8094-6177-1	CAP
80	2	78-8060-8184-6	CAP-35X1.5 (7359-81)
81	2	78-0025-0603-4	COLUMN ANGLE BRACKET
82	17	M4 HEX-L	NUT-M4 HEX-L
83	2	M4X30 SHCS	SCREW-M4X30 SHCS
84	4	78-8017-9317-1	SCREW-M4X12 FHSHCS
85	4	M5X12 PHBHCS	SCREW-M5X12 PHBHCS
86	1	78-8076-4535-9	BRACKET-GAUGE ASSY
87	1	78-0025-3324-4	BRACKET-GAUGE
88	2	M6 WSHR	WASHER-M6 PLAIN
89	2	M6X12 HHCS	SCREW- M6X12 HHCS SPECIAL
90	9	M4X35 SHCS	SCREW-M4X35 SHCS
91	2	M4X55 SHCS	SCREW-M4X55 SHCS

Figure 23039

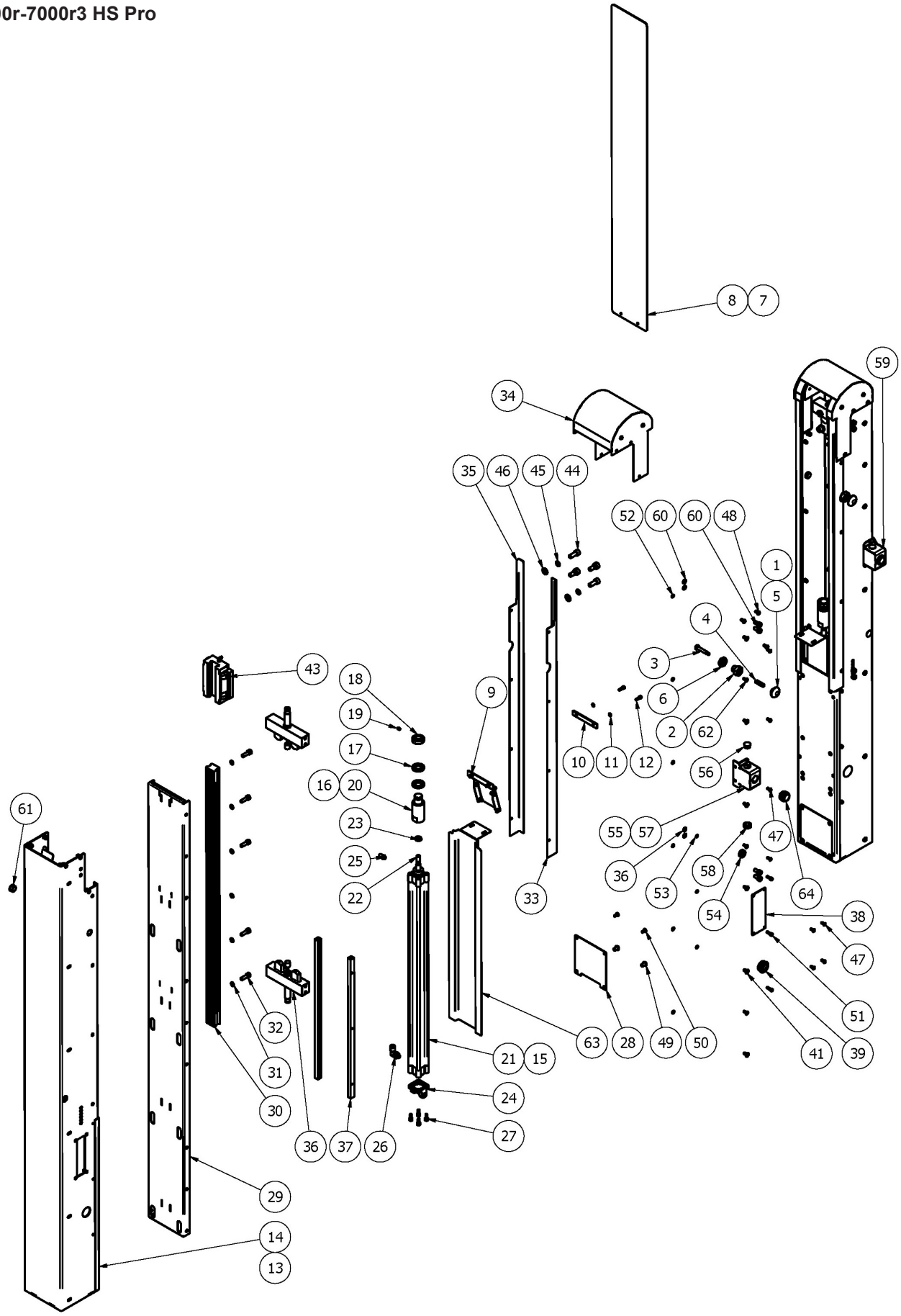


Figure 23040

7000r-7000r3 HS Pro

Bill of Materials			
ITM#	QTY	PART NUMBER	DESCRIPTION
1	2	78-8137-8472-1	MAINTENANCE LATCH
2	1	78-8137-8524-9	Bushing
3	1	78-8076-4544-1	Stud - Height Stop
4	1	78-8076-4545-8	Spring
5	1	78-8100-0954-4	KNOB (BLACK)
6	1	78-8017-9169-6	Nut - M18 x 1
7	2	78-8137-8521-5	Cover - Upper
8	1	78-8137-8493-7	Cover
9	1	78-8137-8494-5	Support for Cover
10	1	78-8137-8495-2	Plate
11	2	M5 WSHR	WASHER-M5 PLAIN
12	2	78-8032-0382-3	Screw - Soc Hex Hd, M5 x 16
13	2	78-0025-0632-3	ASSY COLUMN L=1691 COMPLETE
14	1	78-8137-8476-2	Column
15	1	78-0025-0633-1	CYLINDER ASSY
16	1	78-8137-8486-1	CYLINDER HEAD ASSY
17	2	78-8054-8823-2	Washer - Bumper
18	1	78-8076-4552-4	Ring Nut - Rod
19	1	78-8059-5617-0	Set Screw - M6 x 8
20	1	78-8137-8519-9	Cylinder rod connection H = 61.5mm
21	1	78-8137-6382-4	CYLINDER
22	1	78-8137-8393-9	CYLINDER SHAFT
23	1	78-0025-3302-0	NUT FOR CYLINDER 78-8137-6382-4
24	1	78-8137-6383-2	Hinge - Type D5032-A SMC
25	1	26-1005-6890-1	Muffler - Bronze 1/8"
26	1	78-8091-0313-4	Ftg - Elbow 3199.08.10
27	4	M6X15 SHCS	SCREW-M6X15 SHCS
28	1	78-8137-8477-0	Bottom closing columns
29	1	78-8137-8487-9	Adjustable guide support
30	1	78-8137-8488-7	Linear Guide
31	6	M8 WSHR SCHN	WASHER-SAFETY (SCHNORR)/8 F144
32	6	26-1003-7965-5	Screw - Soc. Hd. Hx. Soc. M8 x 25
33	1	78-8137-8478-8	Internal Cover
34	1	78-8137-8479-6	Cover - Cloumn Upper
35	1	78-0025-0638-0	BRACKET-OUTER COLUMN
36	1	78-8137-8520-7	Bumper Assembly
37	2	78-8137-8481-2	Guide
38	1	78-0025-0641-4	PLATE-COVER
39	1	78-8094-6489-0	GROMMET
40	1	78-8094-6177-1	CAP
41	13	78-0025-0640-6	SCREW-M6 x 12 BHSHCS
42	2	78-0025-0639-8	Calibrated screw for column carrier
43	1	78-8137-8482-0	THK carrier SHS35CSSC1+B-M6F eng.
44	2	M10X25 SHCS	SCREW-M10X25 SHCS
45	2	M10 WSHR SCHN	SAFETY WASHER "S" (SCHNORR)/10 F144
46	2	M10 WSHR	WASHER-M10 PLAIN
47	12	78-0025-0483-1	Fstnr - M5 x 12 MM BHSHCS PLT
48	6	M6X12 BHSHCS	SCREW-6X12 BHSHCS
49	2	M8X12 BHSHCS	SCREW-M8X12 BHSHCS
50	2	78-8060-8087-1	Screw - M5 x 10
51	6	78-8032-0382-3	Screw - Soc Hex Hd, M5 x 16
52	13	M6 WSHR SCHN	WASHER-SAFETY (SCHNORR)/6 F144
53	6	M5 WSHR SCHN	SAFETY WASHER "S" (SCHNORR)/5 F144
54	1	78-0025-3470-5	GROMMET
55	1	78-0025-0754-5	ASSY YELLOW LIGHT SUPPORT LH
56	1	78-8137-0803-5	GROMMET
57	1	78-8137-8474-7	WELDMENT-LIGHT SUPPORT
58	1	78-0025-3470-5	GROMMET
59	1	78-0025-3310-3	LIGHT ASSY RT
60	2	78-8137-8520-7	Bumper Assembly
61	2	78-8076-4547-4	CAP/18
62	5	M5X12 PHBHCS	SCREW-M5X12 PHBHCS
63	2	78-0025-3320-2	COVER-LOWER
64	2	78-0025-0789-1	LIGHT

Figure 23040

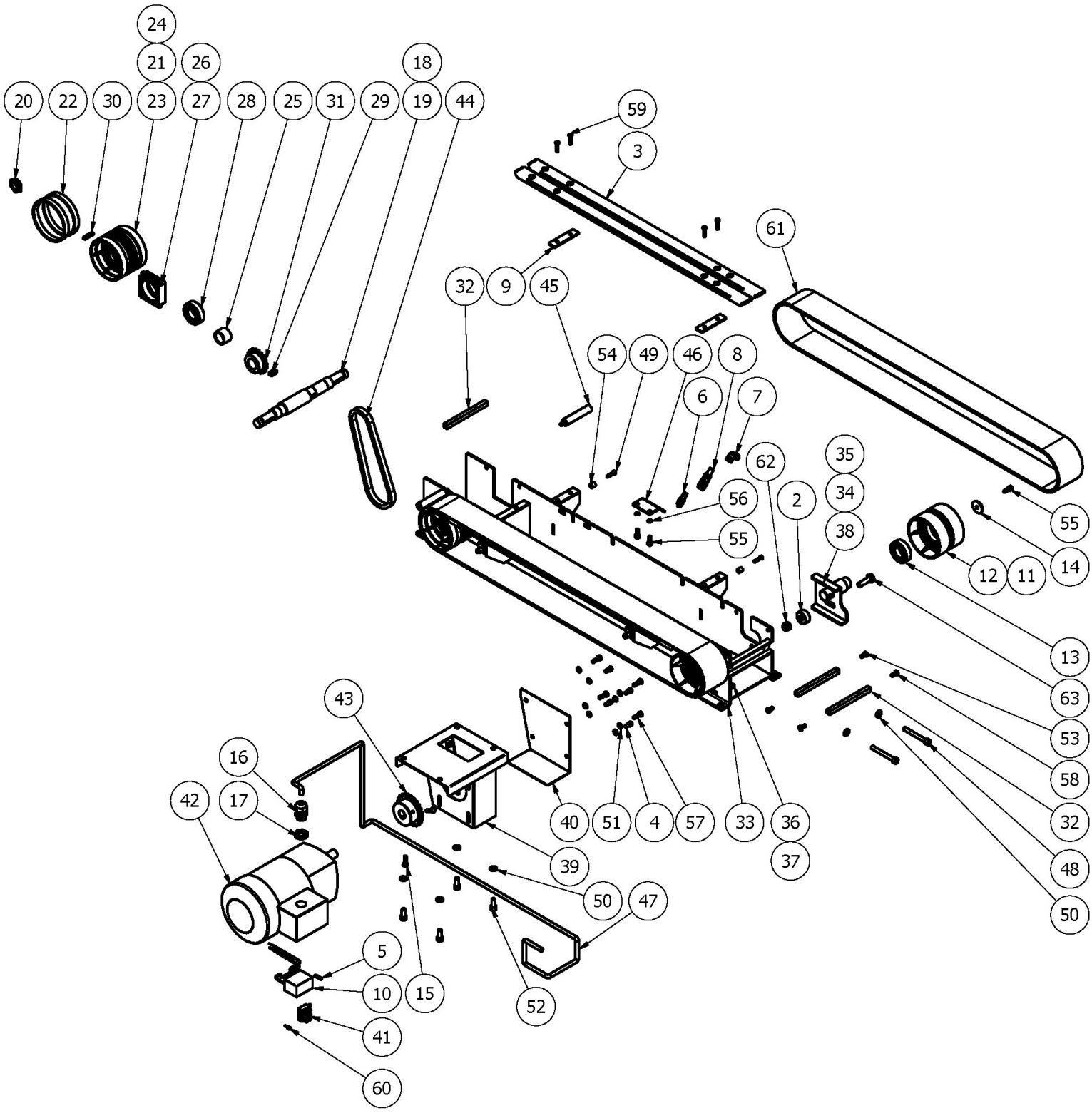


Figure 23042

Bill of Materials			
ITM#	QTY	PART NUMBER	DESCRIPTION
1	1	78-0025-0612-5	LOWER DRIVE ASSY
2	2	78-8070-1518-1	Spacer - Shaft
3	4	78-8137-6297-4	Sliding Guide - Drive Belt
4	4	78-8070-1523-1	Screw - 1/4 - 28 x 1/2 SHCS
5	1	78-8060-7880-0	Terminal - Red
6	1	78-8137-8500-9	Air Fitting - Snap
7	1	78-8137-8461-4	Air Fitting Fem Elbow 1/8
8	1	78-8137-8460-6	Air Fitting Snap
9	4	78-8137-8498-6	Plate for Belts
10	1	26-1011-8828-7	CAPACITOR-15 MF 300V
11	2	78-8052-6710-7	Roller - Idler
12	1	78-8137-8238-6	PULLEY
13	1	78-8070-1530-6	BEARING-6205 2RS
14	2	78-8052-6709-9	Washer - Special
15	2	78-0025-0674-5	Fstnr - M6 x 20mm HHC Grade 8
16	1	78-8076-4715-7	CORD GRIP-13X1.5
17	1	78-8076-5211-6	NUT-SET GMP 13.5
18	1	78-0025-0734-7	Drive pulley assy -
19	1	78-0025-1606-6	Shaft - Drive 7000rhs
20	2	78-8060-8416-2	Nut - Special M20x1
21	2	78-8076-5105-0	PULLEY-DRIVE ASSY W/RINGS
22	2	78-8052-6713-1	RING-POLYURETHANE FRICTION
23	1	78-8137-8291-5	DRIVE PULLEY
24	1	78-0025-3119-8	PULLEY-INSERT
25	1	78-8054-8984-2	Bushing
26	2	78-0025-3120-6	Assy - Bearing Support
27	1	78-8070-1529-8	Support - Shaft
28	1	78-8070-1530-6	BEARING-6205 2RS
29	1	78-0025-1608-2	Key - 8mm x 7mm Rounded
30	2	78-8057-5739-6	Key - M5 x 5 x 30mm
31	1	78-0025-1607-4	Sprocket - #06B, 26mm Bore, Key, Z=19
32	3	78-8137-0568-4	Spacer
33	1	78-8137-7983-8	Frame - Bottom Drive Belt w/Nutserts
34	1	78-8137-7850-9	TENSIONER-BELT L/R
35	2	78-8137-8009-1	Pin - Idler Pulley
36	1	78-8137-8013-3	Belt Tensioner - Bottom Drive
37	1	78-8137-9298-2	TENSIONER-BELT L/L
38	1	78-8137-8012-5	Belt Tensioner - Bottom Drive
39	1	78-8137-8239-4	WELDMENT-MOTOR SUPPORT
40	1	78-8137-8011-7	Cover - Gearmotor
41	1	78-8076-4968-2	Terminal - Three Pole
42	1	78-8091-0596-4	Motor - KS w/ Capacitor
43	1	78-8137-8222-0	Pinion Z=25 P=3/8" D=19.05
44	1	78-8137-8449-9	Chain - 58 Pitch, 3/8" 7000R-HS
45	2	78-8137-8099-2	Bar - Support
46	1	78-8137-8462-2	Support
47	1	78-8137-5956-6	CABLE-TRIPOLAR
48	2	M8X70 SHCS	SCREW-M8x70 SHCS
49	4	M5X20 HHCS	SCREW-M5X20 HHCS
50	6	M8 WSHR	WASHER-M8 PLAIN
51	10	M6 WSHR	WASHER-M6 PLAIN
52	4	M8x20 SHCS	SCREW-M8X20 SHCS
53	2	26-1003-5829-5	Screw - Hex Hd, M6 X 12
54	4	78-8070-1534-8	Stud - Side Plate
55	4	M6X16 SHCS	SCREW-M6X16 SHCS
56	2	M6 WSHR SCHN	WASHER-SAFETY (SCHNORR)/6 F144
57	4	M6X20 HHCS	SCREW-M6X20 HHCS
58	2	M6X16 FHSHCS	SCREW-M6X16 FHSHCS
59	8	78-8091-0537-8	SCREW-M5X25 FHSHCS
60	3	78-8137-8235-2	RED DOUBLE CORD END TERMINAL FOR /1.5
61	2	78-8137-6303-0	Belt - Drive 7000a/r
62	2	M10 HEX NUT	NUT-M10 HEX LOCKING
63	2	78-0025-3126-3	SCREW-M10X35 HHCS

Figure 23042

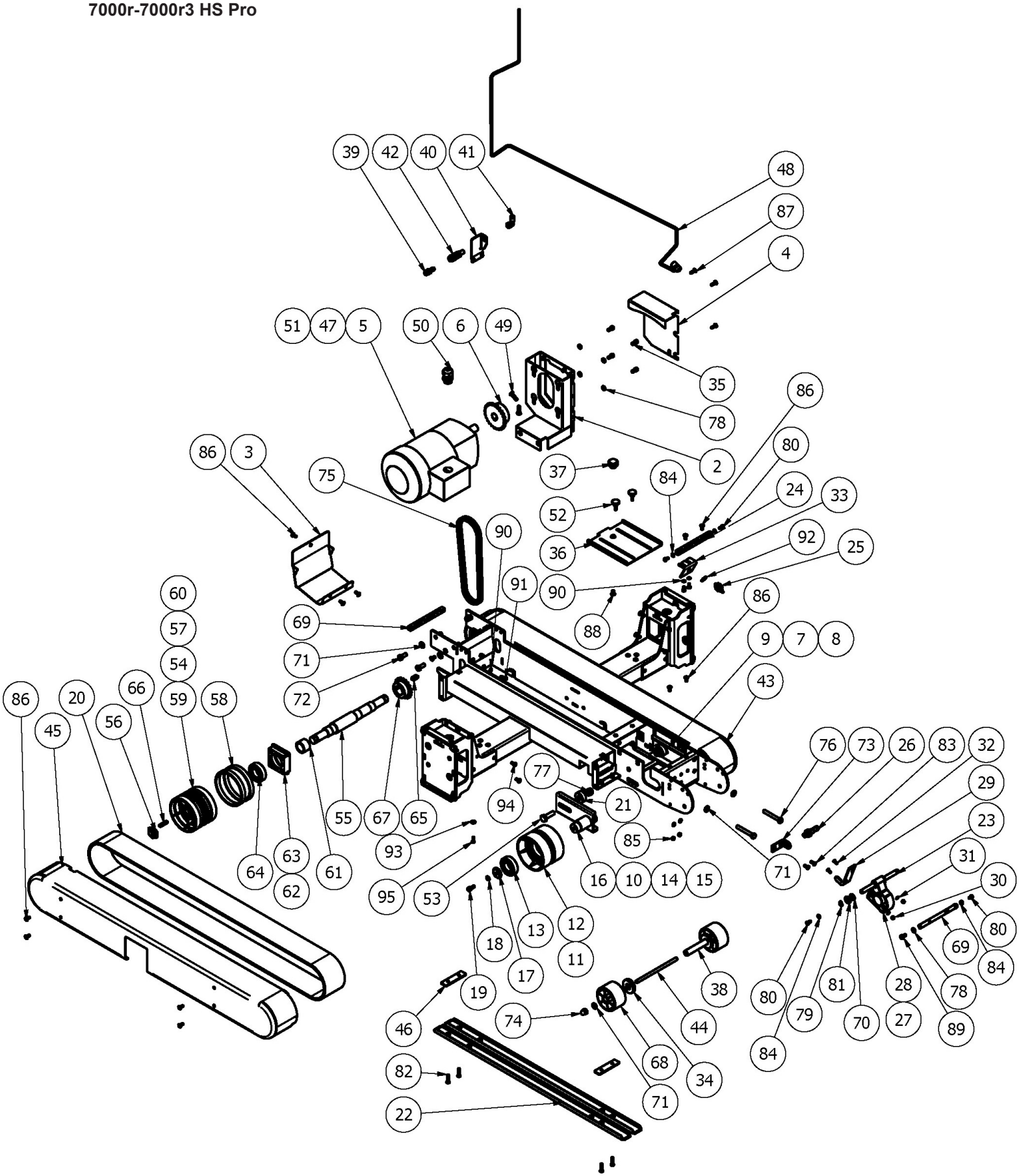


Figure 23041

7000r-7000r3 HS Pro

Bill of Materials			
ITM#	QTY	PART NUMBER	DESCRIPTION
1	1	78-0025-0642-2	UPPER DRIVE ASSEMBLIES
2	1	78-8137-8216-2	Gear Reducer Support
3	1	78-0025-1725-4	Plate - Guard Rear Upper Drive
4	1	78-8137-8220-4	Cover - Motor upper assy
5	1	78-8091-0596-4	Motor - KS w/ Capacitor
6	1	78-8137-8222-0	Pinion Z=25 P=3/8" D=19.05
7	1	78-8100-1236-5	Belt Tensioning Assembly RH
8	1	78-8100-1238-1	BRACKET-BELT TENSIONING ASSY R/H
9	1	78-8137-8018-2	BELT TENSIONER-BOTTOM DRIVE
10	1	78-8100-1237-3	Belt Tensioning Assembly LH
11	2	78-8052-6710-7	Roller - Idler
12	2	78-8137-8238-6	PULLEY
13	2	78-8070-1530-6	BEARING-6205 2RS
14	1	78-8100-1239-9	BRACKET-BELT TENSIONING ASSY L/H
15	1	78-8137-8020-8	BELT TENSIONER-BOTTOM DRIVE
16	2	78-8137-8009-1	Pin - Idler Pulley
17	2	78-8052-6709-9	Washer - Special
18	2	78-8010-7435-8	Washer - M6 Lock
19	2	26-1003-7957-2	Screw - Soc Hd, Hex Soc, M6 x 16
20	2	78-8137-6303-0	Belt - Drive 7000a/r
21	2	78-8070-1518-1	Spacer - Shaft
22	4	78-8137-6297-4	Sliding Guide - Drive Belt
23	1	78-8137-0591-6	PIN-CAM
24	1	78-8137-5450-0	FIXING SPACER-COVER
25	1	78-8137-7719-6	SPRING PLUNGER
26	1	78-8137-7720-4	Switch - Proximity M12 7000r
27	1	78-8137-8224-6	Lever Assy
28	1	78-8137-8019-0	Lever - Proximity Sensor
29	1	78-8137-8387-1	Bracket – Support Nose Switch 7000rhs
30	2	M4 HEX-L	NUT-M4 HEX-L
31	2	M4 WSHR	WASHER-M4 PLAIN
32	2	78-8017-9317-1	SCREW-M4X12 FHSHCS
33	1	78-8137-8225-3	Bracket - Sensor
34	2	78-8137-7715-4	Spacer - Infeed Rollers
35	4	78-8070-1523-1	Screw - 1/4 - 28 x 1/2 SHCS
36	1	78-8137-6357-6	Fixing Plate - Top Unit
37	1	78-8137-8017-4	Knob - 193/25 B-M6 Elesa
38	1	78-8137-0536-1	Tube - Roller Entry
39	1	78-8137-8500-9	Air Fitting - Snap
40	1	78-8137-8501-7	Support
41	1	78-8137-8461-4	Air Fitting Fem Elbow 1/8
42	1	78-8137-8460-6	Air Fitting Snap
43	1	78-8137-8496-0	COVER RT DRIVE BELT
44	1	78-8137-0535-3	Shaft - Roller 700a3 (15233-14)
45	1	78-8137-8497-8	COVER LT DRIVE BELT
46	5	78-8137-8498-6	Plate for Belts
47	1	26-1011-8828-7	CAPACITOR-15 MF 300V
48	1	78-8137-8427-5	CORD
49	2	78-0025-0674-5	Fstnr - M6 x 20mm HHC Grade 8
50	1	78-8076-4715-7	CORD GRIP-13X1.5
51	1	78-8076-5211-6	NUT-SET GMP 13.5
52	2	78-8137-6355-0	Knob - M5X16 Elesa DIN 464
53	1	78-8137-8499-4	Upper Structure
54	1	78-0025-0734-7	Drive pulley assy -
55	1	78-0025-1606-6	Shaft - Drive 7000rhs
56	2	78-8060-8416-2	Nut - Special M20x1
57	2	78-8076-5105-0	PULLEY-DRIVE ASSY W/RINGS
58	2	78-8052-6713-1	RING-POLYURETHANE FRICTION

Figure 23041

Bill of Materials			
ITM#	QTY	PART NUMBER	DESCRIPTION
59	1	78-8137-8291-5	DRIVE PULLEY
60	1	78-0025-3119-8	PULLEY-INSERT
61	1	78-8054-8984-2	Bushing
62	2	78-0025-3120-6	Assy - Bearing Support
63	1	78-8070-1529-8	Support - Shaft
64	1	78-8070-1530-6	BEARING-6205 2RS
65	1	78-0025-1608-2	Key - 8mm x 7mm Rounded
66	2	78-8057-5739-6	Key - M5 x 5 x 30mm
67	1	78-0025-1607-4	Sprocket - #06B, 26mm Bore, Key, Z=19
68	2	78-8137-0599-9	Roller
69	2	78-8137-0568-4	Spacer
70	2	78-8017-9074-8	Washer - Nylon 10.5M/18X1 (15MM)
71	8	M8 WSHR	WASHER-M8 PLAIN
72	4	M8X20 HHCS	SCREW-M8X20 HHCS
73	1	78-8137-8231-1	Support for Proximity Switch
74	2	M8 ACORN NUT	NUT-M8 ACORN
75	1	78-8137-8226-1	Chain 64p 3/8"x7/32"
76	2	M8X60 HHCS	SCREW-M8X60 HHCS
77	2	M10 HEX NUT	NUT-M10 HEX LOCKING
78	6	M6 WSHR	WASHER-M6 PLAIN
79	2	78-8016-5855-6	E-Ring - 10 mm
80	8	M5X10 HHCS	SCREW-M5X10 HHCS
81	2	M10 WSHR	WASHER-M10 PLAIN
82	10	78-8091-0537-8	SCREW-M5X25 FHSHCS
83	2	78-8017-9333-8	SCREW-M5X14 FHSHCS
84	2	M5 WSHR	WASHER-M5 PLAIN
85	4	26-1005-6859-6	Nut - Self-Locking, M5 VC
86	15	M5X12 PHBHCS	SCREW-M5X12 PHBHCS
87	3	M5X16 PHBHCS	SCREW-5X16 PHBHCS
88	3	M6X12 FHSHCS	SCREW-M6X12 FHSHCS
89	2	M6X12 HHCS	SCREW- M6X12 HHCS SPECIAL
90	4	M5 WSHR SCHN	SAFETY WASHER "S" (SCHNORR)/5 F144
91	2	78-8032-0382-3	Screw - Soc Hex Hd, M5 x 16
92	1	78-8057-5803-0	WASHER-M10 LOCK
93	4	M4-WSHR FEND	WASHER-M4 FENDER
94	8	M5X12 PHBHCS	SCREW-M5X12 PHBHCS
95	4	78-8060-7818-0	SCREW-M4X12 HHCS

Figure 23041

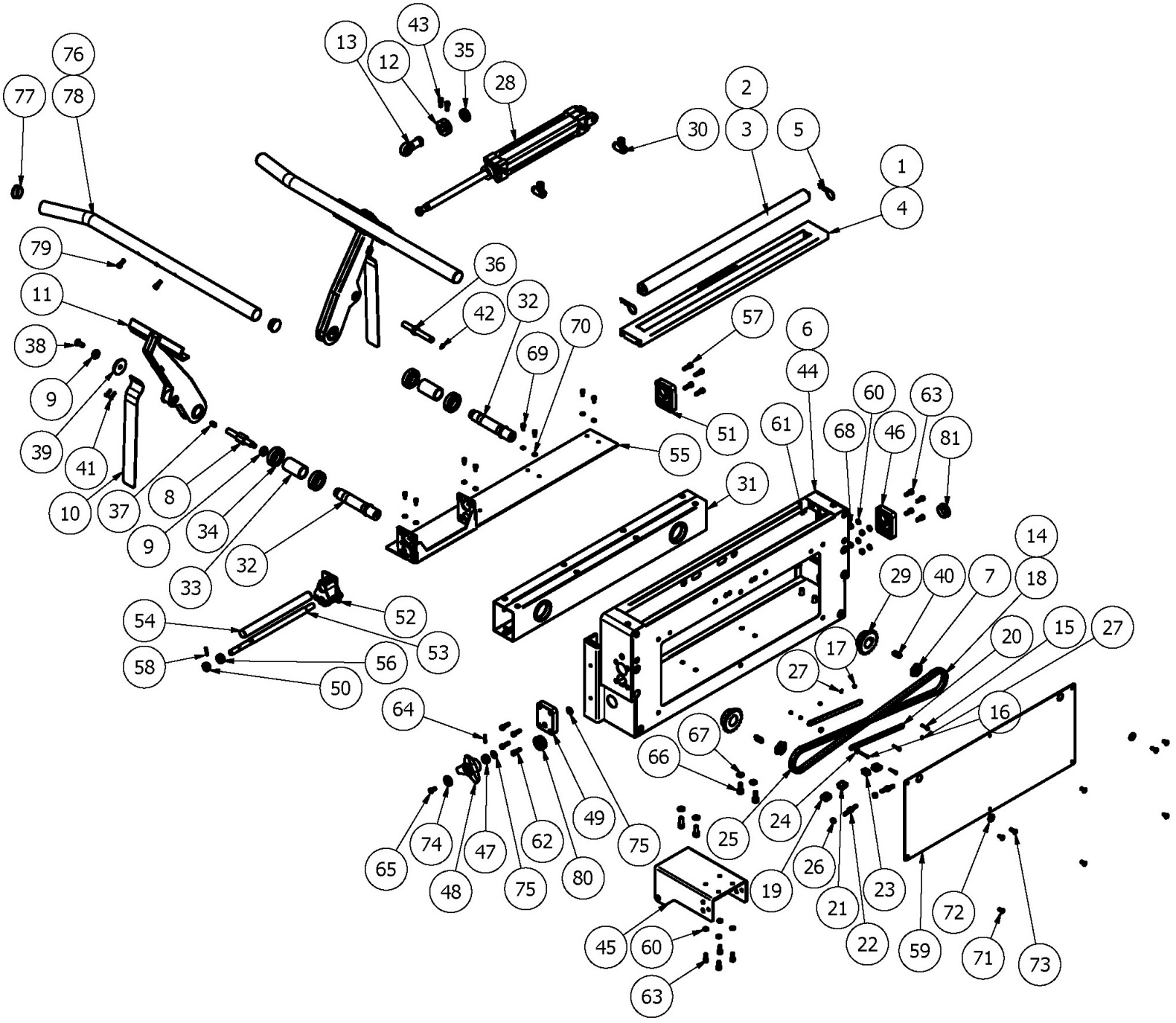


Figure 23037

7000r-7000r3 HS Pro

Bill of Materials			
ITM#	QTY	PART NUMBER	DESCRIPTION
1	1	78-8137-8162-8	ROLLER ASSY.
2	1	78-8114-5073-9	Roller - Conveyor 32 x 1. 2 x 580 (7359-74)
3	1	78-8137-0997-5	SHAFT-ROLLER
4	1	78-8137-7981-2	Cover
5	2	78-8076-5385-8	Cotter Pin
6	1	78-8137-8514-0	Assy - Centering Section
7	2	78-8060-8416-2	Nut - Special M20x1
8	1	78-8137-8466-3	Pin for Cylinder Joint
9	3	78-8091-0555-0	Nut - M12 Special
10	2	78-8100-1162-3	Strap - Safety
11	2	78-8100-1158-1	Lever - Infeed
12	1	78-8137-0566-8	Locking Collar
13	1	78-8057-5747-9	Mount - Cylinder Rod End
14	1	78-8137-7707-1	CHAIN ASSY
15	3	78-8060-7520-2	Screw - M3X20
16	1	78-8060-7519-4	Screw - M3X25 VCL
17	4	78-8059-5517-2	Nylock Nut M3 X 0.5
18	1	78-8055-0718-9	CHAIN-3/8" PITCH 55 PITCH LONG
19	1	78-8054-8788-7	Chain Connector
20	2	78-8054-8787-9	Chain Link
21	2	78-8054-8786-1	Chain Connector
22	2	78-8054-8785-3	Rod - Threaded Right/Left
23	1	78-8054-8784-6	Block - Chain
24	2	78-8054-8783-8	Washer - Special
25	1	78-8137-7948-1	CHAIN-3/8" P=37
26	2	M6 HEX NUT	NUT-M6 HEX
27	2	78-8056-3945-3	E-Ring - M4
28	1	78-8137-8467-1	Centering Device Cylinder
29	2	78-8076-4571-4	Sprocket - Z=20
30	2	78-8137-3766-1	Flow Regulator
31	1	78-8137-0992-6	FRAME
32	2	78-8076-4567-2	PIVOT D=25-30-25-M20 L=142 CENTERING UN
33	2	78-8076-4518-5	SPACER-BEARING
34	4	78-8023-2551-0	BEARING - 6005-2RS
35	1	78-8100-1154-0	Washer -/30-15-05
36	1	78-8076-4573-0	PIN-AIR CYLINDER
37	2	78-8076-4570-6	Key - 6X6X15
38	2	M8X20 FHSHCS	SCREW-M8X20 FHSHCS
39	2	78-8054-8588-1	WASHER D8,5/40X6
40	2	78-8076-4568-0	Key - 7X8X25
41	4	78-0025-3474-7	SCREW-M4X16 PHBHCS
42	1	SR-EXT 8	SNAP RING-EXT. 8 STAINLESS STEEL
43	2	M6X16 SHCS	SCREW-M6X16 SHCS
44	1	78-8137-8464-8	Frame for Center Device
45	1	78-8137-8159-4	Roll holder support ass. 700r/3"
46	1	78-8137-8100-8	ROD SUPPORT-S11-T KYOWA S8
47	1	78-8129-6113-0	BUSHING-130CF-3M/S8 CENTERING SCREW
48	1	78-8137-8465-5	ELESA handwheel VB.639/80 FP-M12
49	1	78-8137-8076-0	ROD SUPPORT-LEAD SCREW/LINEAR GUIDE
50	1	78-8129-6113-0	BUSHING-130CF-3M/S8 CENTERING SCREW
51	1	78-8137-8076-0	ROD SUPPORT-LEAD SCREW/LINEAR GUIDE
52	1	78-8137-8468-9	Slider
53	1	78-8137-8469-7	Screw - Lead
54	1	78-8137-8470-5	Shaft
55	1	78-8137-8471-3	Support
56	1	78-0025-0936-8	BUSHING
57	4	M6x20 SHCS	SCREW-M6X20 SHCS
58	1	78-8137-0922-3	Pin - Spring 4 x 20
59	1	78-0025-0611-7	Generic metal sheet parts
60	10	M6 WSHR	WASHER-M6 PLAIN
61	4	78-8094-6210-0	Screw - Soc Hd. M4 x 10
62	4	M6x20 SHCS	SCREW-M6X20 SHCS
63	10	M6X16 SHCS	SCREW-M6X16 SHCS
64	1	78-8137-0922-3	Pin - Spring 4 x 20
65	1	M6X16 FHSHCS	SCREW-M6X16 FHSHCS
66	8	M8x20 SHCS	SCREW-M8X20 SHCS

Figure 23037

Bill of Materials			
ITM#	QTY	PART NUMBER	DESCRIPTION
67	8	M8 WSHR	WASHER-M8 PLAIN
68	4	M6 HEX NUT	NUT-M6 HEX
69	8	M5X12 SHCS	SCREW-M5X12 SHCS
70	8	M5 WSHR	WASHER-M5 PLAIN
71	6	M5X12 PHBHCS	SCREW-M5X12 PHBHCS
72	2	M6 WSHR FEND	WASHER-M6 FENDER
73	2	M5X16 PHBHCS	SCREW-5X16 PHBHCS
74	1	78-8137-0874-6	Special Washer / 6
75	2	78-0025-0610-9	WASHER-SPECIAL-12X18X0.5
76	2	78-8137-8454-9	CENTERING ARMS ASSY
77	2	78-8054-8779-6	End - Cap
78	1	78-8137-8516-5	GUIDE ARM
79	2	M6X16 SHCS	SCREW-M6X16 SHCS
80	1	78-8094-6489-0	GROMMET
81	1	78-8094-6177-1	CAP

Figure 23037

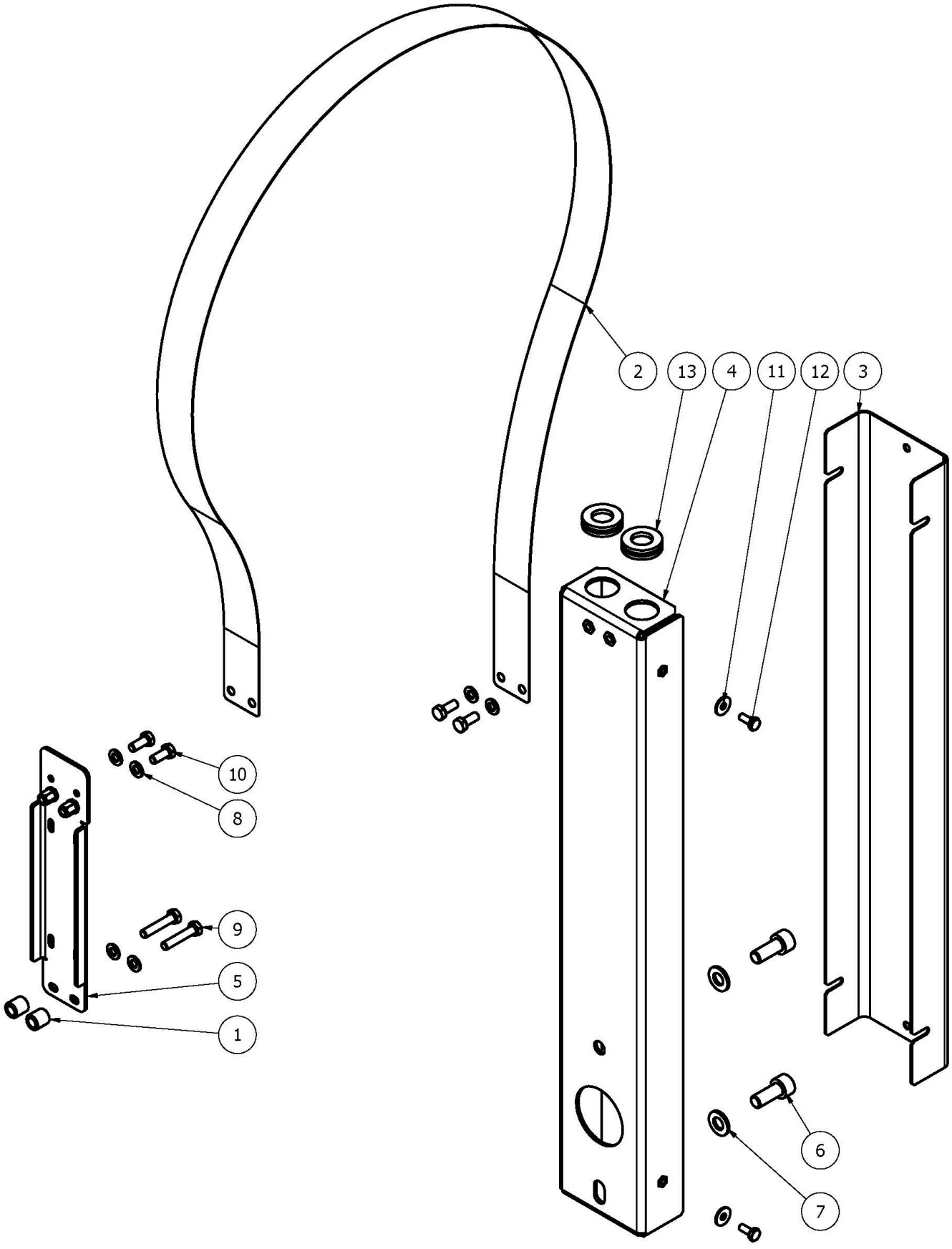


Figure 23008

Bill of Materials			
ITM#	QTY	PART NUMBER	DESCRIPTION
1	2	78-8055-0640-5	Spacer
2	1	78-0025-0928-5	TRACK-CABLE
3	1	78-8137-7853-3	COVER-HOUSING
4	1	78-0025-3156-0	HOUSING-CABLE
5	1	78-0025-3157-8	BRACKET-CABLE TRACK (UPPER)
6	2	M8x20 SHCS	SCREW-M8X20 SHCS
7	2	M8 WSHR	WASHER-M8 PLAIN
8	6	M5 WSHR	WASHER-M5 PLAIN
9	2	M5X25 HHCS	SCREW-M5X25 HHCS
10	4	M5X12 HHCS	SCREW-M5X12 HHCS
11	4	M4-WSHR FEND	WASHER-M4 FENDER
12	4	M4X10 HHCS	SCREW-M4X10 HHCS
13	2	78-8060-7758-8	GROMMET

Figure 23008

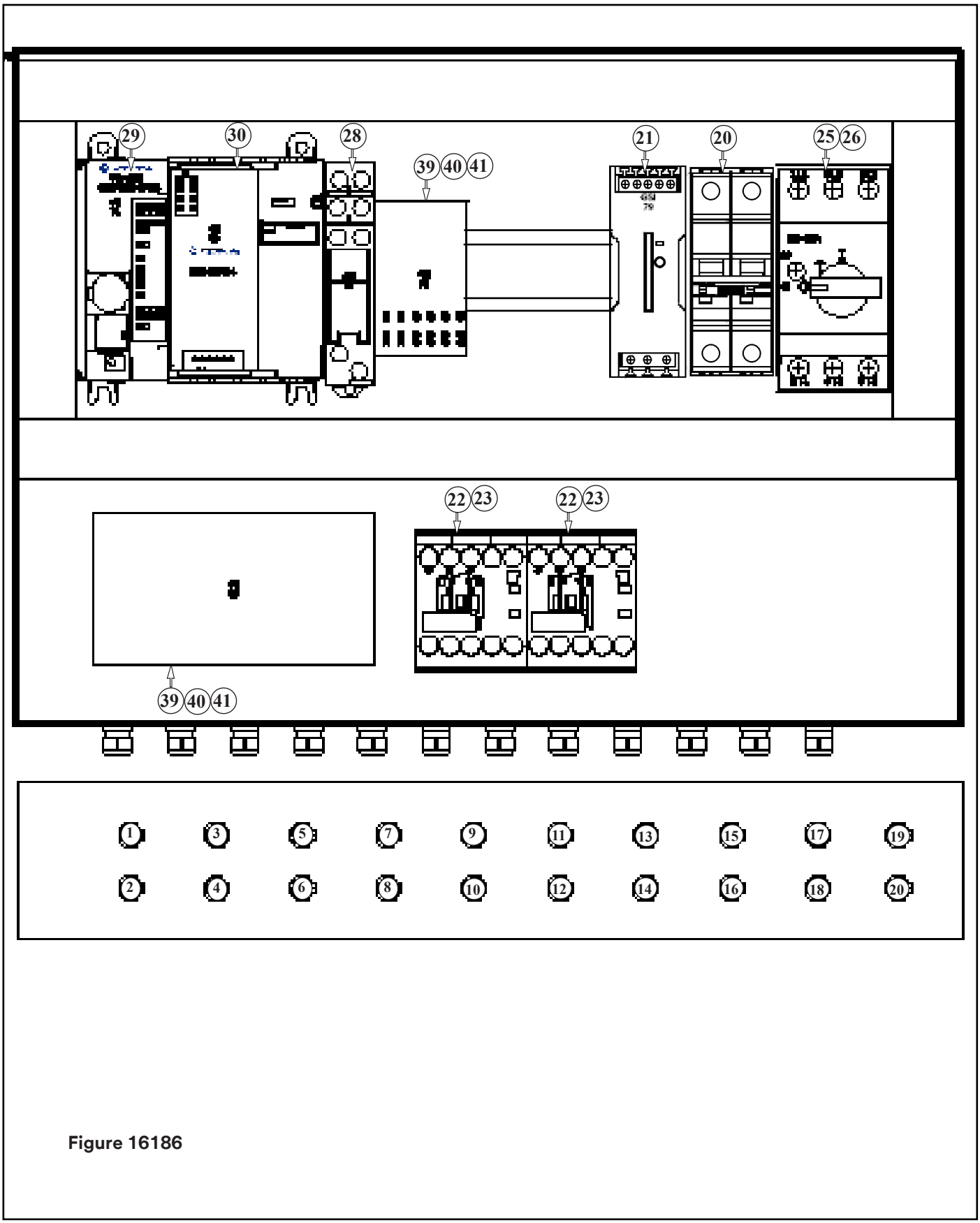


Figure 16186

Figure 16186

Ref. No.	3M Part No.	Description
16186-1	78-8137-8587-6	Cable W29 connector M8 4 direct supply length 2.5mt
16186-2	78-8028-7909-4	Cable W1 Supply
16186-3	78-8137-8587-6	Cable W14 connector M8 3 poly length 2.30mt
16186-4	78-8137-5956-6	Cable W2 3G AWG18 length 1.3mt
16186-5	78-8137-8589-2	Cable W30 Y9 MP1+LED+VDR 24V/Cable L=2.00 MT.
16186-6	78-8137-5956-6	Cable W3 3G AWG18 length 1.9mt
16186-7	78-8137-5956-6	Cable W4 3G AWG 18 length 1.20
16186-8	78-8137-8592-6	Cable W6 12G 0.85 Olflex Tray II 221812 length 2.20+pushbutton
16186-9	78-8137-7714-7	Cable W19 Connector M12 RT
16186-10	78-8137-7714-7	Cable W20 Connector M12 RT
16186-11	78-8137-7714-7	Cable W23 Connector M12 RT
16186-12	78-8137-8590-0	Cable W26 connector M12 direct 4 poly length 2.7mt
16186-13	78-8137-8589-2	Cable W15 Y1 MP1+LED+VDR 24V/Cable L=2.30 MT.
16186-14	78-8137-8587-6	Cable W28 connector M8 4 poly direct length 3.70
16186-15	78-8137-8589-2	Cable Sol W18 Y5 MP1+LED+VDR 24V
16186-16	78-8137-8589-2	Cable Sol W31 Y2 MP1+LED+VDR 24V
16186-17	78-8137-8589-2	Cable Sol W32 Y8 MP1+LED+VDR 24V
16186-18	78-8137-8593-4	Ground Wire / 2.5 Length 0.7 mt.+Eyelet Terminal (Not Shown)
16186-19	78-8137-8587-6	Cable W28 connector M8 4 poly direct length 3.70
16186-20	78-0025-0854-3	Circuit Breaker F1 2A v
16186-21	78-8137-0765-1	Supply - Power, 240/110 VAC, 24VDC
16186-22	78-8137-7734-5	Contactor - 24VDC DILM7-10
16186-23	78-8137-8354-1	Suppressor 24 VDC
16186-24	78-8137-0618-2	Cable W24/W25 Connector M12 Split
16186-25	78-8137-0780-5	Switch - 4-6,3 A
16186-26	78-8137-0782-1	Spacer
16186-28	78-8137-8351-7	Relay - G2R-2-SND 24Vdc
16186-29	78-8137-8270-9	Controller - 12 IN-7 Out 2080-LC20-20QB
16186-30	78-0025-0330-4	Card - Exp Micro 820 PLC 41/40
16186-31	78-0025-0333-8	Cord Grip - PG11
16186-32	78-8076-4645-6	Lock Nut - PG11
16186-33	78-0025-0409-6	Switch - Toggle (On/Off) 10A
16186-34	78-0025-0506-9	Screw - M3 x 5/8” HHCS (16mm) PLT
16186-35	78-8059-5517-2	Nut - M3 x 0.5 Nylock
16186-36	78-8076-4538-3	Washer - M3 Flat
16186-37	78-0025-0488-0	Bracket - TAM Switch
16186-38	78-0025-0490-6	Fitting - 1/2” NPT Cord Grip
16186-39	78-0025-0485-6	Block - 5mm Spring Clamp
16186-40	78-0025-0486-4	Barrier - 5mm End 2 Tier
16186-41	78-0025-0487-2	Jumper - 10 Pole Terminal - High Density
16186-42	78-0025-1623-1	Label - TAM States (Not Shown)
16186-43	78-0025-0541-6	Key - Enclosure (Not Shown)
16186-44	78-0025-1609-0	Cable W44 - QD 5C M12 Micro 3 Meter

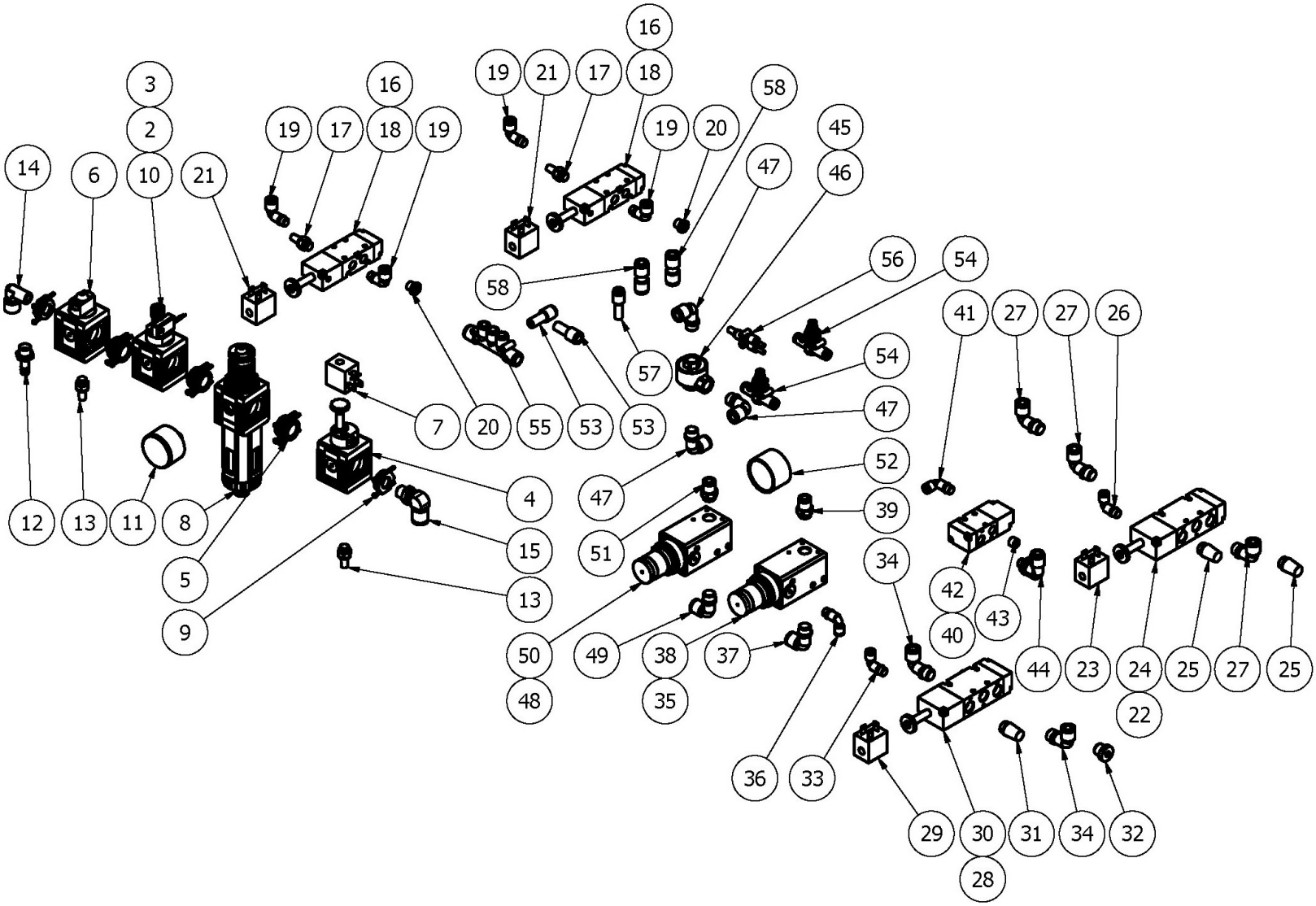


Figure 23045

Bill of Materials			
ITM#	QTY	PART NUMBER	DESCRIPTION
1	1	78-0025-0619-0	PNEUMATIC ASSEMBLIES
2	1	78-8137-8248-5	Filter Reducer Assembly
3	1	78-8137-8249-3	Air Pressure Assembly - 24VDC
4	1	78-8137-8252-7	Filter - Regulator FR SY1
5	3	78-8137-8251-9	COUPLER
6	1	78-8137-7957-2	Valve - Manual V3V SY1
7	1	78-8137-7701-4	Coil - 22 ø8 BA 2W-24VDC UR
8	1	78-8137-6395-6	Filter - Regulator FR SY1 20 08 RA
9	2	78-0025-0620-8	CONNECTOR
10	1	78-8137-8250-1	SPECIAL PRESSURE SWITCH SY NO BUSHES
11	1	78-8054-8838-0	Guage - Air (6236-15)
12	1	26-1005-6897-6	Hose Connector RA030 9-1/4"(6236-18) VC
13	2	78-8137-7704-8	W097-Silencer MW SE
14	1	78-8060-7900-6	Union - RA022 1/4"-1/4"
15	1	78-8119-8615-3	MALE ELBOW G1/4-10 31991013 LEGRIS
16	2	78-8137-8254-3	Solenoid Valve Assy
17	1	78-8137-7704-8	W097-Silencer MW SE
18	1	78-8137-7700-6	Valve - SOV 25 SOS OO
19	2	78-8076-4890-8	Fitting - 90 Degree Elbow, 6mm
20	2	78-8060-7690-3	Cap - B-1/8 Inch
21	1	78-8137-7701-4	Coil - 22 ø8 BA 2W-24VDC UR
22	1	78-0025-0625-7	Valve - Assembly Solenoid-1/4"
23	1	78-8137-7701-4	Coil - 22 ø8 BA 2W-24VDC UR
24	1	78-0025-0622-4	Valves (6323002)
25	2	78-8076-4886-6	OBS - USE PN0190023 - Muffler 1/4"
26	1	78-8076-4888-2	KQL Male elbow - Inch-size One-touch Fittings Male elbow
27	3	78-8076-4885-8	KQL Male elbow - Inch-size One-touch Fittings Male elbow
28	1	78-0025-0621-6	Valve Assy
29	1	78-8137-7701-4	Coil - 22 ø8 BA 2W-24VDC UR
30	1	78-0025-0622-4	Valves (6323002)
31	1	78-8076-4886-6	OBS - USE PN0190023 - Muffler 1/4"
32	2	78-8094-6276-1	Cap - 1/4 ISO
33	1	78-8076-4888-2	KQL Male elbow - Inch-size One-touch Fittings Male elbow
34	2	78-8076-4885-8	KQL Male elbow - Inch-size One-touch Fittings Male elbow
35	1	78-8137-8509-0	Colunns Adjuster
36	1	78-8076-4888-2	KQL Male elbow - Inch-size One-touch Fittings Male elbow
37	1	78-8076-4885-8	KQL Male elbow - Inch-size One-touch Fittings Male elbow
38	1	78-0025-0623-2	REGULATOR
39	1	78-8094-6075-7	UNION - STRAIGHT
40	1	78-0025-3315-2	ASSEMBLY HEAD DESCENT VALVE
41	1	78-8076-4888-2	KQL Male elbow - Inch-size One-touch Fittings Male elbow
42	1	78-8137-8554-6	PNEUMATIC VALVE PNV23PNSNC - 7010010200
43	1	78-0025-3317-8	CAP 1/8"
44	1	78-8091-0313-4	Ftg - Elbow 3199.08.10
45	1	78-0025-0857-6	Valve - Shuttle 1/4 ISO W/Fittings
46	1	78-0025-0856-8	Valve - Shuttle 1/4 Iso Metalwork
47	3	78-8076-4885-8	KQL Male elbow - Inch-size One-touch Fittings Male elbow
48	1	78-8137-8508-2	Centering Device Adjuster
49	1	78-8076-4885-8	KQL Male elbow - Inch-size One-touch Fittings Male elbow
50	1	78-0025-0623-2	REGULATOR
51	1	78-8094-6075-7	UNION - STRAIGHT
52	1	78-8076-4671-2	Gauge - Pressure
53	2	78-8119-8620-3	REDUCER - 31660810
54	2	78-8137-8555-3	IN-LINE FLOW REGULATOR Ø6
55	1	78-8119-8618-7	UNION - MULTIPLE 33041008
56	1	78-0025-0628-1	Y CONNECTOR 31420406 F144
57	1	78-8114-4705-7	Union - KQR 06-08 (M8 to M6 reducer)
58	2	78-8076-4906-2	KQH Straight Union - One-touch Fitting Straight Union

Figure 23045

Optional: Tape Application Monitor (TAM)

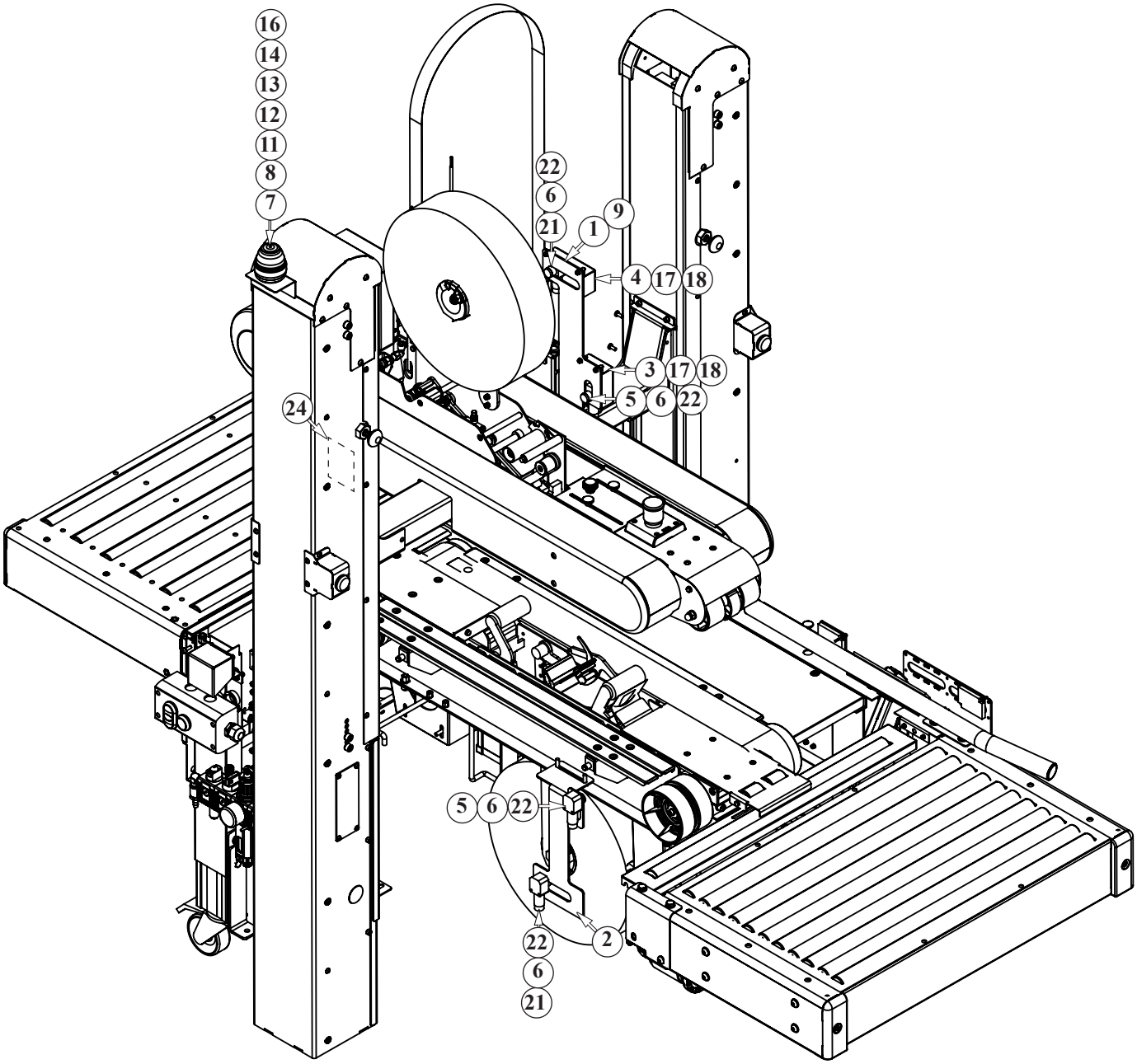


Figure 16083

Figure 16083

Ref. No.	3M Part No.	Description
16083-1	78-0025-0404-7	Weldment - Upper TAM Bracket
16083-2	78-0025-0405-4	Weldment - Lower TAM Bracket
16083-3	78-0025-0399-9	Cover - TAM Switch (Upper)
16083-4	78-0025-0400-5	Cover - TAM Switch (Upper - Low Tape)
16083-5	78-0025-0406-2	PE - Retro Laser M12 QD
16083-6	78-0025-0407-0	Cord - QD 4C Micro AB 10mm (W33, W34, W36, W37)
16083-7	78-0025-0333-8	Light - Signal (Mulit-Color)
16083-8	78-0025-0334-6	Adapter - NPT 16 - 1/2 NPT (Signal Light)
16083-9	26-1014-8756-4	Fastener - M6 X 1.0 X 20mm SCHS
16083-10	26-1000-0010-3	Washer - M6 Flat
16083-11	78-0025-0336-1	Bracket - Light Mount
16083-12	78-0025-0337-9	Fitting - Cord Grip
16083-13	78-0025-0338-7	Lock Nut - Zinc Plate Steel
16083-14	78-0025-0395-7	Fitting - Coupling 1/2” Pipe Galvanized
16083-16	78-0025-0335-3	Pipe - 1/2” NPT 10” Aluminum
16083-17	78-8032-0379-9	Screw - M4 X 16 Soc Head, Hex Head
16083-18	26-1016-2496-8	Washer - M4 Plain
16083-21	78-0025-0421-1	PE _Diffuse 500mm QD
16083-22	78-0025-0420-3	Washer - Lock Star 3/4 in.
16083-24	78-0025-0494-8	Label - Tam (legend)